

Scientific American.

THE ADVOCATE OF INDUSTRY, AND JOURNAL OF SCIENTIFIC, MECHANICAL AND OTHER IMPROVEMENTS.

VOL XIV.

NEW YORK, JUNE 25, 1859.

NO. 42.

NEW PROSPECTUS
OF THE
SCIENTIFIC AMERICAN.
ENLARGEMENT.

Volume I., Number 1—New Series.

The Publishers of the SCIENTIFIC AMERICAN respectfully announce to their readers and the public generally, that, on the first day of July next (1859), their journal will be enlarged and otherwise greatly improved; and at that time will be commenced "Volume I., No. 1, New Series," which will afford a more suitable opportunity for the commencement of new subscriptions than is likely to occur again for many years.

The form of the journal will be somewhat changed from what it now is, so as to render it better adapted for binding and preservation; and instead of eight pages in each number as now, there will be sixteen and in a completed yearly volume the number of pages will be doubled to 832, or 416 more than now.

The SCIENTIFIC AMERICAN is published at a price which places it within the reach of all; and as a work of reference for the Workshop, Manufactory, Farm and Household, no other journal exceeds or even equals it in the value and utility of its information. Its practical recipes alone oft-times repay the subscription price ten-fold. Inventors will find it, as heretofore, the mirror of the Patent Office, and the reliable record of every claim issued weekly by the Office, the list being officially reported for its columns.

With the enlargement of the SCIENTIFIC AMERICAN, we shall be enabled to widen the sphere of our operations, omitting none of the features which now characterize it, but adding many new ones, which will render the work more valuable to all classes of the community than it has heretofore, among which is the devoting of space to a Price Current, and a column or two to the Metal and Lumber markets, and such other branches of trade as may be interesting and useful.

The increased outlay to carry out our design of enlargement will amount to eight thousand dollars a year on our present edition; and in view of this we appeal to our readers and friends to take hold and aid in extending our circulation. Think of getting, at our most liberal club rates, a yearly volume containing about 600 original engravings and 832 pages of useful reading matter, for less than three cents a week! Who can afford to be without it at even ten times this sum?

Two VOLUMES will be issued each year; but there will be NO CHANGE IN THE TERMS OF SUBSCRIPTION, as the two yearly volumes together will be Two Dollars a Year, or One Dollar for Six Months.

CLUB RATE \$3.

Five Copies, for Six Months.....	\$4
Ten Copies, for Six Months.....	\$8
Ten Copies, for Twelve Months.....	\$15
Fifteen Copies, for Twelve Months.....	\$23
Twenty Copies, for Twelve Months.....	\$28

Southern, Western and Canadian money or Post-office stamps, taken at par for subscriptions. Canadian subscribers will please to remit twenty-six cents extra on each year's subscription, to prepay postage.

For all clubs of Twenty and over, the yearly subscription is only \$1.00. Names may be sent in at different times and from different Post-offices. Specimen copies will be sent gratis to any part of the country.

When you order the SCIENTIFIC AMERICAN, be careful to give the name of the Post-office, County, and State to which you wish the paper sent. And when you change your residence, and desire your paper changed accordingly, state the name of the Post-office where you have been receiving it, and that where you wish it sent in future.

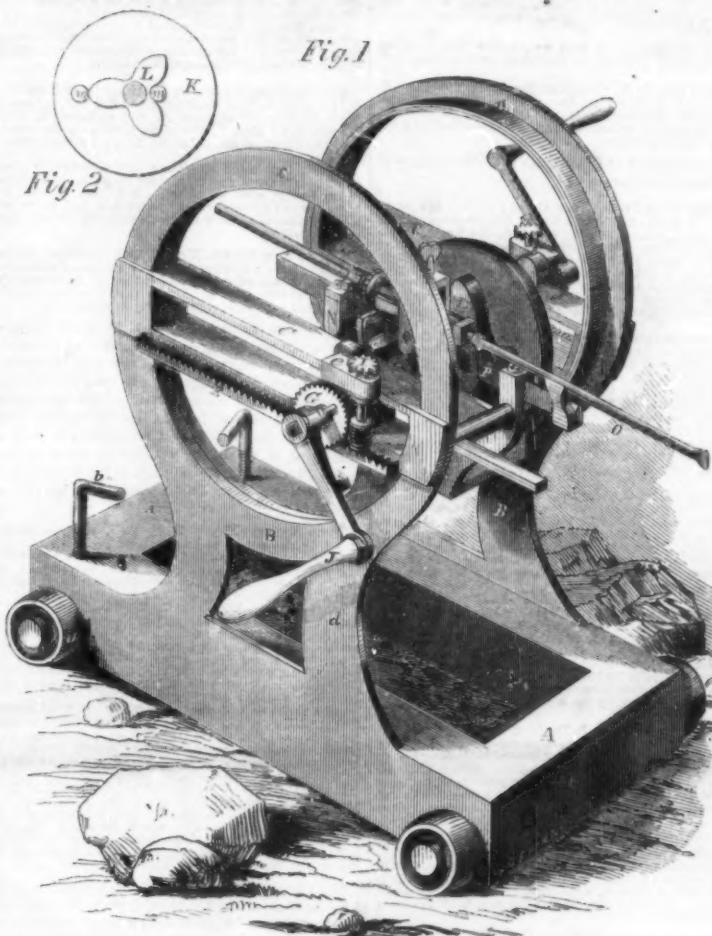
MUNN & CO., Publishers and Patent Agents,
No. 37 Park-row, New York.

Beautiful Electrotype Table Tops.

A most beautiful invention, connected with ornamental tables, has lately been exhibited in London. It consists in securing, with varnish, mother-of-pearl, precious stones, curious shells, &c., on a plate of copper intended for a table top. These are arranged in an artistic manner to represent figures, leaving spaces of clean copper between them and then submitting it to an electrotype bath, where a deposit of copper is made to fill up the spaces between the stones, &c., and thus hold them embedded in the metal. After this the plate is submitted to a silver electroplating bath and the copper covered with silver, thus forming a curious and exquisite table cover ready to be placed on a pedestal.

We have to thank Capt. A. A. Humphreys of the Topographical Engineers, for his able report of recent explorations and surveys, and the excellent maps which have been constructed under his supervision.

WHITE'S ROCK AND COAL DRILL.



A really good drill is a great desideratum for mining purposes, and has long been wanted; one so arranged that it could be worked by hand or power as the size of the bore or the facilities of the mine or quarry enabled to be done. The subject of our engraving is such a machine, and is the invention of Lyman White, of Davenport, Iowa, the patent being granted this week.

Fig. 1 shows a perspective view of the whole machine and Fig. 2 an isolated view of the working cam. A is a frame which is mounted on small rollers, a, that can be adjusted by screw rods, b. To each side of the frame, A, is an upright supporting piece, B, formed of an annular top piece, c, and two supports, d. Within each piece, c, a bar, C, is placed, and secured in the desired position by screws. C are slotted longitudinally nearly their whole length, and a bearing, e, is fitted so that it can slide in the slot. D is a shaft which rotates in e. On the outer edge of C a rack, E, is placed, in which the teeth of a wheel fit, that is connected with the worm wheel, G, both of which turn loosely on the shaft, D. A screw, H, gears with G, and on the top of H is a small toothed wheel, I, that is moved one tooth every time the crank, J, makes one revolution by the pin, i, passing between the teeth of I. By this means the drill is fed to its work. On the shaft, D, a wheel or disk, K, is placed, and it is provided on its face with a cam, L. On D there is suspended a box which carries a carriage, N O P, on which are placed the rollers, m m, that, passing both sides the cam, L, cause

the carriage to be moved back and forth by the cams. The drill, O, is secured in a frame in this carriage that is provided with a ratchet wheel at its end, so that the drill may be rotated as it is at work. The operation is very simple. By turning the cranks, J, the drill receives a rapid percussive and return motion, giving three blows to one rotation of the crank, and at the same time the drill is fed to its work and itself turned to cut the whole round. It can be advantageously used by farmers to remove rocks from the farm, and is so simple that any mechanic can construct it. A two-inch bore and under can be done by hand, and it is only above that size that animal or steam power will be required. The editor of the *Iowa State Democrat* has seen it in operation, and speaks very highly of its performances.

Any further information can be obtained by addressing the inventor as above.

Flaxen Ringlets.

Poets have often sung in raptures of blue-eyed, laughing flaxen-haired girls, but George Speight, of London, a thoroughly practical man, understands things better than those dreaming rhymers who make sonnets to their sweethearts' ringlets, for he makes flaxen ringlets for those sweethearts. He has just taken out a patent for making plaits and curls for headdresses and other head ornaments and employs Russian or American hemp dyed to the exact shade desired, and glossed up with aromatic grease, and curled to adorn the head of some happy fair one either with flowing auburn or raven locks as may be desired.

When it is taken into consideration that long brown hair for making ladies' artificial curls costs from \$10 to \$12 per pound, Mr. Speight may be considered a sort of benefactor to all those individuals who are deficient in natural cranial ornamentation, although we think his invention will rather spite the girls in Normandy, who cultivate their hair expressly for our wigmakers.

Peddlers in human hair traverse France, and attend the country fairs, to which the girls flock who have long tresses for sale. These are offered for examination, and a bargain struck for each fleece according to its length, color, and texture—the dark auburn being the most prized. When this is done, down sits the devoted fair one on a stool, and a large pair of ruthless scissors soon completes the operation, and the price being paid, the shorn damsel goes on her way rejoicing. Beautiful long tresses which a fashionable lady would not part with for thousands of dollars are parted with by the French rustic maidens without a sigh and for very small sums, little dreaming that in a short time afterwards, they may be attracting a score of admirers in Broadway. Such has been the way of the world heretofore, but Mr. G. Speight intends to have a different order of things hereafter—if he can.

New Gold Discovery.

The Melbourne (Australia) *Argus* states that great excitement has been created at the celebrated Bendigo Diggings by the discovery that a conglomerate metal, very common, but which has been hitherto disregarded, will yield not less than 150 oz. of pure gold to the ton, with a very large per centage of zinc. The analysis is as follows:—Zinc, about 45 per cent; iron, about 20 per cent; sulphur, about 15 per cent; arsenic, about 10 per cent; other extraneous substances, about 9 per cent; gold, about 1 per cent: total, 100—giving a result of 1 oz. of pure gold out of every 100 oz. of the conglomerate. It states that "this discovery has opened up a fresh mine of incalculable wealth." From the nature of the alloy it will not be an easy process to reclaim the gold, and it will not pay the expenses in Australia. If this conglomerate were imported at a small cost to New York, it could be smelted and refined with profit.

MOLDS OF ENGRAVINGS.—Gutta-percha can be dissolved in olive oil by the agency of heat, and it then becomes a plastic mass, which is kneaded with warm water to wash it, and the moisture then pressed out. It is now laid on the face of an engraved plate, which is designed and copied by the electrotype process, and heat is applied to the under surface. The composition is thus melted and fills up every line of the engraving; it is then suffered to cool and when it becomes dry and hard, it is easily removed and forms a mold containing a perfect copy of the engraving. The face of this mold is now dusted with pure plumbago, and placed in an electrotype trough, when a coat of copper is deposited upon it. In a very simple manner multiplied copies of engravings can thus be obtained.

PROSPECTUS.—We hope the friends of the SCIENTIFIC AMERICAN will send without delay for our prospectus, with a view to getting subscribers on our new volume; and from those who have already received them we hope to soon hear a good account.

Scientific American.



Issued from the United States Patent Office
FOR THE WEEK ENDING JUNE 14, 1859.

[Reported officially for the Scientific American.]

* Circles giving full particulars of the mode of applying for patents, size of model required, and much other information useful to inventors, may be had gratis by addressing MUNN & CO., Publishers of the SCIENTIFIC AMERICAN, New York.

WASHING MACHINE.—Pleasant Armstrong, of Camden, Alas.: I claim, first, the arrangement of the complete stationary rounds of the convex swing frame, on two semi-circular lines of different diameters, so that the rollers on the smallest semi-circle shall stand above and opposite the spaces between the rollers on the largest semi-circle, in combination with the arrangement of the stationary rounds of the concave, substantially as and for the purposes set forth.

Second, the arrangement of two auxiliary treadle standards with the main standards of the tub, in the manner described and for the purpose set forth.

MACHINE FOR PRINTING ADDRESSES.—John A. Barrington, of Fredericksburg, Ohio: I claim, first, A cylinder constructed with grooved ribs, or their equivalents, for holding forms of type, presenting them at a proper point, to perform the office of printing, and afterwards allowing them to be delivered from the cylinder, substantially as described.

Second, in combination with the cylinder, B, I claim the ribs, k, arranged upon an endless chain, in such manner as to receive the forms of type, as described.

Third, Sealing the form, i, within the ribs, b, in such manner as to present said forms properly for printing, by means of the follower, j, j n, catch, l', and spring l'', substantially as described.

Fourth, Adjusting the forms of type for printing and delivering them from the cylinder after printing, by means of a reciprocating bar, operating substantially as described, or its equivalent.

Fifth, The incited feed-wheel, W, constructed with adjustable spring conveyor, v', and operating substantially as described.

Sixth, Regulating and adjusting the speed of the endless apron, v, by means of the inclined disk, f, friction wheel, l', actuating, V' V' V, a screw, and crank screw, V, all constructed, arranged and operating substantially as described for the purpose set forth.

GAGE FOR MEASURING THE PRESSURE OF FLUID.—Victor Beaumont, of New York City: I claim, first, So arranging respectively dome-shaped elastic disks of one or more spring chambers in pressure gages, as that the pressure of steam or other fluid within said chamber is indicated by the motion of the disk or plate, which presents its convexity to the pressure.

Second, The manner substantially as described of guiding the free end of a spring, consisting of one or more chambers, expanding by pressure from within, in order to prevent it from vibrating in any direction but that of its axis.

Third, In pressure gages with a hollow spring chamber mechanism, I claim partially filling the space inside of chambers with a solid substance, or substances, in the manner and for the purposes set forth.

INSTRUMENT FOR MEASURING THE STRENGTH OF WATCH SPRINGS.—J. M. Bottom, of New York City: I claim an arbor, having a measuring spring affixed thereto, together with an index, substantially as described, and an attachment for attaching the hair spring to be measured, combined and arranged in the manner and for the purposes set forth, and constituting a ready means of determining the exact force of said hair springs, as specified.

CHEMIST.—P. S. Devlin, of Reading, Pa.: I claim the employment in a churn, in which the cream is acted upon by a blast only of a float, G, substantially as and for the purpose described.

OIL SEPARATOR.—Wm. O. Bourne, of New York City: I claim, first, A sieve-bed, in which the opening or openings for the passage of the air or water through it are so contracted as to enforce an uniform action of the air or water through the entire surface of the sieve-bed, which may be made of sheet metal, or of any textile material, either separately or in combination, or of the equivalent, as and for the purpose set forth.

Second, The application of a vibrating and shaking motion to a sieve-bed, in combination with a blast or current of air, or water, in the manner and for the purpose described.

Third, The described adjustable blades for agitating the substance on the sieve-bed, and for regulating the discharge of the refuse substances over the front edge of the table, as described.

Fourth, The separation of metals, or other heavy substances, from ore, or other materials, when upon a sieve-bed, by the gravitation of the lighter substances towards and over the front or waste edge when acted upon by a current of air, or water through a sieve-bed, in the manner and for the purpose set forth.

MANUAL HAND PROPELLER.—E. C. Brackett, of Newton Corner, Mass.: I claim the arrangement and combination of the adjustable ear, B, arms, D, oscillating shaft, E, hinged blades, F, rods, G, arms, K P, rod, N, and lever, H, as and for the purposes set forth and described.

[This device is more especially intended to propel boats from ten to twenty tons, and to replace the single enormous oar now in use. A number of propellers or blades are hung to a pivoted arm which is fixed to the end of a vertical post attached to the side of the boat, and they are operated by means of an arm, connecting rod, and lever so as to give to them a swinging or vibrating motion, at the same time the blades are so hinged as to adapt themselves to the impact of the water in an inclined position similar to the act of rowing or sculling.]

VALVE.—Wm. Bramwell, of New York City: I claim the sliding nut, k, actuated by the screw, l, in combination with the hinged valve, m, and toggle links, l', substantially as specified.

REEFING SAILS.—Joseph Francis Brouard, of Havre de Grace, France: Patented in France Feb. 2, 1855: I claim, first, A device for supporting the rolling yard, F (Fig. 12), sheet, N, between its points of suspension, by the hook, N, the said hook being pivoted and operated as described for the purpose of staying the rolling yard and holding it in position, when the sail attached to it is acted upon by the wind, as set forth.

Second, The construction of the boom iron, shown in Fig. 9, sheet No. 2, for the purpose of placing the boom in position, to prevent the chafing of the sail, as described.

PROJECTILE FOR KILLING WHALES.—Robert Brown, of New London, Conn.: I claim, the spikes on the shank of the bomb, the line attached thereto, the groove or indentation in the barrel of the bomb, for the line as stated.

SELF-PRIMING LOOMS.—J. S. Butterfield and Simon Marshall, of Philadelphia, Pa.: We claim, first, The extension, g, on the carrier, c, in the manner and for the purpose as substantially set forth.

Second, We claim a device disconnecting each primer from the roll, with the ring of the hammer in the manner and for the purpose as substantially set forth.

Third, We claim the adjustable center projection, h, and thumbcrew, q, q, arranged and operated in the manner and for the purpose as substantially set forth.

METHOD OF ATTACHING THE CAPPING OF FENCE POSTS.—R. S. Cadwell, of Andover, Ohio: I claim the projection, or tongue, A, formed on the top of the post, in connection with the mortise, L, in the capping, for attaching the said capping to the post, and securing it with a batton, as described.

METHOD OF FASTENING LETTERS TO SIGNBOARDS, &c.—Thos. Champion and Thos. Motley, of Washington, D. C.: We claim the placing or casting on the back of letters projections with solid cast or wrought shanks therefrom.

We claim holes in said projections to fasten by screws, nails, or rivets, substantially as described.

FLY-TRAP.—I. S. Clough, of Brooklyn, N. Y., and S. R. Burrell, of New York City: We claim the combination of the stationary cone, revolving catcher and start and reciprocate, when constructed as described and for the purpose specified.

[An illustration and description of this invention will be found on another page.]

SUGAR CANE PRESS.—Thos. Crane, of Port Atkinson, Ind.: I claim the combination of the pressure roller, B C, with the main bearing wheel, A, of a frame, which is so proportioned and supported that it can be rotated around a pivot post, but this I only claim when a fluid receiving vessel, a, a conducting tube, i, a annular channel, j, and a receiving spout, k, are combined with the said frame, substantially in the manner and for the purpose represented and described.

MANUFACTURING PAPER.—S. S. Crocker and Geo. E. Marshall, of Somerville, Mass.: We claim, first, The combination of internally heated dryers, cylinders, with a steam box or boxes, arranged for the purpose of continuously first thoroughly drying paper, and then superficially moistening it, by the direct application of steam prior to the operation of calandering.

Second, The combination of the weights, 3 and 4, the knotted cord and slotted arm, 5, for the purpose of controlling the set-off of the taking up beam, as described.

LOOMS.—Chas. Crossley, of Ellington, Conn.: I claim first, The combination of the series of vibrating tuft formers, K' K'', and the vibrating reed, G H, arranged and operating substantially as described.

Second, The combination of the weights, 3 and 4, the knotted cord and slotted arm, 5, for the purpose of controlling the set-off of the taking up beam, as described.

DRAIN TILE MACHINES.—Jones Daines, of Birmingham, Mich.: I claim, first, The bar, G, and hooks, L, in combination with the crossbar, E, when used for the purpose of opening the lid, C, automatically, as described.

Second, I claim the bar, B, combined with the frame, F, in the manner mentioned, with the levers, L, for cutting off the tie by the returning of the plunger.

HORSE BRACKET.—T. B. Davis, of Lexington, Mass.: I claim the improved mode of fastening and confining directly to the foot, so as to injure the ankle or tendons, by a hinged bracket, C, and a screw, D, and also the machinery by which the bracket is adjusted to the size of the foot, and hold more firmly and securely than by any other mode of attachment now known.

MILK CAN.—E. R. Denniston, of Middletown, N. Y.: I claim, having its cover, C, hinged to a branch, f, and provided with a plate, b, stopper, k, and having the guard hook, B, attached to the body of the can, b, all as shown and described.

PLOWS.—Ell Moore, of Slabtown, S. C.: I claim the arrangement of the beam, A, brace, B, clevis, C, foot, D, stock, E, and ring, F—the whole being constructed as described for the purposes specified.

BREECH-LOADING FIRE-ARM.—Daniel Leavitt, of Chicopee, Mass.: I claim a "combination packing," consisting of a piece of felt fitting snugly into the rear portion of the barrel, and a piece of stout paper, pasteboard, or other hard, inflexible material of a form and size to pass easily through the barrel, the felt being placed next the breech of the fire-arm, and the paper or hard material between the felt and the charge, that by the force of the explosion it may be driven back against the felt and so caused to compress the same against the breech and spread it laterally against the sides of the chamber and force it close against the joint, and so prevent the escape of gases and keep the joint perfectly clean. This "combination packing" is applicable to breech-loading fire-arms of various constructions.]

OPERATING SWITCHES ON RAILROADS.—Chas. Foster, of Eldridge's Mill, N. J.: I claim the mode of operating switches by means of movable cams, i, l, or their equivalents, on the car, acting on a cam, A, or its equivalent, connected by means of levers with the switch rail, c, substantially as described.

ATTACHMENTS TO LOCOMOTIVE ENGINES FOR REMOVING OBJECTS FROM THE TRACK.—C. H. Eisenbrandt, of Baltimore, Md.: I claim the double suspension lifting platform, composed of the parts, c c e, d, d, e, f, g, g, h, h, J, J, K, K, L, m, m, the yielding network or flexible fender guard, or its equivalent, i i i i, when constructed, combined and arranged substantially in the manner and for the purpose set forth, and described.

MACHINES FOR DRESSING MILL-STONES.—H. B. Gill, of Ogdensburg, N. Y.: I claim the combination and arrangement of the pivoted segmental arm, O, and slide, N, with the striking lever, G, and cam, M, or its equivalent, substantially in the manner and for the purpose set forth.

MACHINES FOR MAKING HAY.—T. L. Goff, of Warren, R. I.: I claim the combination of the gathering rake, D, and revolving rake, E, when arranged for joint operation, substantially as and for the purpose set forth.

[A gathering and a revolving rake fitted in a frame mounted on wheels are used in this invention, by which the grass as it is left by the mowing machine may be expeditiously turned for the purpose of being cut or made into hay. The object of this invention is to expedite the process of making hay, so that the work may be speedily done, and the old injunction of "make your hay while the sun shines" be better fulfilled.]

VENTILATORS.—G. D. Greenleaf, of Chateaugay, N. Y.: I claim, in combination with the cylinder, A, bell-shaped casting, G, and plates, B D, the cup, J, and register, I, for the purpose specified.

[By allowing the impure air of a room to escape into the pipe of a stove by which a chamber is heated, a good ventilation is obtained, and one so simple that it should be universally adopted.]

ROTARY ENGINES.—Dexter D. Hardy, of Cincinnati, Ohio: I claim, first, The arrangement of the rings, e, e', operating in the described combination with the plates, i, to pass the revolving shaft, C, in its connection with the stationary cylinder, A, by the use of steam or water pressure as explained.

Second, The combination and arrangement of the revolving shaft, C, containing the receiving and discharge ports, J K, with the stationary cylinder, A B, and cutters, D D, when arranged as described, and in combination with the adjustable mold-boards.

HORSE RAKES.—Henry Hersh, of Lancaster, Pa.: I claim the arrangement and combination of the S-shaped teeth, H, hook, I, revolving axle, B, and clearers, M, as described and for the purposes set forth.

OMNIBUS REINFORCES.—H. C. Howells, of New York City, and J. C. Howells, of Madison, Wis.: We claim, first, The employment of a yielding platform to determine the value of the entry or fare, and in combination with doors, or equivalent devices, to secure the registration of persons standing upon it previous to their ingress or egress substantially as specified and set forth.

Second, We also claim the employment of a yielding platform with doors, or equivalent devices, to determine the value of the entry or fare, and in combination with doors, or equivalent devices, to secure the registration of persons standing upon it previous to their ingress or egress substantially as specified and set forth.

Third, We claim, in combination with the yielding platform, G, an operative lever, N, and vertical rod, M, and puppet, Q, or their equivalents, substantially as set forth and for the purpose specified.

Fourth, We claim the pin, or bolt, s, in combination with the arm, O, attached to the vertical rod, M, or their equivalents, for communicating motion to the registering levers, S and T, by the action of the jointed arm, P, substantially as specified and set forth.

Fifth, We also claim the registration levers, S and T, with the registering ratchet wheels, U and V, and the spring pawls, m m, together with the double dial, X, for registering the whole or half entries or fares, substantially as set forth and specified.

Sixth, We also claim the stationary brushes, and the arrangement and combination of levers and rods, or their equivalents, for operating the doors and steps, substantially as set forth and for the purpose specified.

Seventh, We claim, in combination with the hopper, D, pins, Y, slide blocks, O, and regulating plate, E, the reciprocating bar, F, with its clearers, R R', and stirrers, S, these several devices being constructed and arranged for operation conjointly in the manner and for the purpose described.

SOWING MACHINES.—Solon P. Hubbell, of Unadilla, N. Y.: I claim the combination of the bar, I, having teeth, W, angular notches, X, and clearers, V, with the hopper, D, the pins, Y, and slide blocks, O, the whole being constructed and arranged as and for the purpose described.

Eighth, We also claim the stationary brushes, and the arrangement and combination of levers and rods, or their equivalents, for operating the doors and steps, substantially as set forth and for the purpose described.

Ninth, We also claim, in combination with the passage, C, piston or valve, E, rod, I, lever, F, diaphragm spring or piston, B, and safety-valve, H, arranged to operate in relation to each other as and for the purpose described.

Tenth, We claim, in combination with the piston, C, piston or valve, E, rod, I, lever, F, diaphragm spring or piston, B, and safety-valve, H, arranged to operate in relation to each other as and for the purpose described.

DEVICES FOR SECURING THE CLEVIS TO PLOWS.—R. B. Pringle, of Coventry, N. Y.: I claim the arrangement of the pin, C, feather or rib, c, spaces, e e, clevis, B, beam, A, and groove, a, as described, for the purposes set forth.

KEYS, ETC., FOR PIANO FORTES.—Joseph Hoffacker and Joseph Richards, of New York City: We claim, first, The construction of the key-board, by substituting, instead of the usual keys, knobs connected with the main levers, substantially as described.

Second, The pivoted rod, a, in combination with the main levers, m, substantially as described.

Third, The construction of the damper, O, substantially as set forth.

Fourth, The construction of the trigger, z, and its action upon the damper, O, substantially as described.

Fifth, The construction of the hammer, s, and its action in combination with the principal lever, m, substantially as described.

CLIP FOR CARRIAGE THILLS.—Daniel J. Riker, of Harrison, N. Y.: I claim extending the plate, c, of the carriage clip, in the form of a spring, to the eye of the shafts, and causing said spring to operate on the aforementioned eye, in the direction of the pull, to keep the parts of the bolt and eye in contact, for the purposes and as described.

SPEDDER AND STRETCHER FLYERS.—John N. Sawtell, of Chicopee, Mass.: I claim the new article of manufacture described for a flyer for spinning frames, when constructed essentially in the manner and for the purposes set forth.

METHOD OF VENTILATING CORN HOUSES.—Noah Seitz, of Mellewood, Ohio: I claim the arrangement of the openings, O and O', with the wire grating, in combination with the secondary perforated floor, d, lathing, e, and ventilator, f, substantially as and for the purposes set forth.

SAW-SIR.—Alex. Shoemaker, of Carey, Ohio, assignor to James G. Hunt, of Reading, Ohio: I claim the adjustable arm, O, with the fingers and adjusting screw in combination with the spring trip-hammer.

I also claim the spring, I, and the trip-hammer, in combination with the adjusting frame, L, and rollers, N N, and adjusting screws; these several devices I claim, when arranged substantially as set forth for the purpose described.

CONSTRUCTING SHEET-METAL COFFINS.—Isaac C. Shuler, of Amsterdam, N. Y.: I claim, first, The arrangement of strengthening the lower part of a sheet-metal coffin, by folding the ends and edges together consecutively in several thicknesses, the surplus edges of the sides and of the sheet-metal tray, c, forming a rim around the outside circumference of the base, and fastening the walls of the coffin firmly thereto. I claim also the arrangement of fastening to the under-side of this tray, or bottom of the coffin, the frames, b b, for the purpose of stiffening it.

Second, The arrangement of placing on the inside of a sheet-metal coffin a metal tray, d, with scrolled edges, which rests on a flange formed by turning in the walls of the coffin all round their lower edges, and fastening the tray firmly thereto, and also to the walls, for the purpose of stiffening the interior. I also claim the frames, b b, for strengthening this tray.

Third, The arrangement of scrolling or folding outwardly, and soldering, consecutively, each fold of the surplus edges of the walls of a sheet-metal coffin, forming a rim all around the upper edge of the walls, for the purpose of strengthening and securing the same in straight lines for jointing, substantially as described.

Fourth, The arrangement of forming on the inside of the upper edges of the walls of a sheet-metal coffin, a scrolled rim on the piece, e, for the purpose of more firmly supporting the air-tight cover, and also for the purpose of securing the cover by screws as well as by solder when desirable.

Fifth, The arrangement of fastening on the outside of a sheet-metal coffin between the stiffening rims of the upper and lower edges of the walls, the studs or pillars, o, at the corners and along the sides and ends in any required number, according to the size of the coffin, for the purpose of stiffening the sheet-metal, in order that the structure may sustain a heavy weight.

Sixth, The arrangement of scrolling and soldering together the surplus edges of the air-tight cover of a sheet-metal coffin, and beading the same, which, on being turned under, serves to fit the groove, i, as well as to stiffen the cover. Also the stiffening bars, b, substantially as described.

Seventh, The arrangement of pressing a recess in the sheet-metal all round the windows of a sheet-metal coffin for receiving and supporting the glass. I also claim the arrangement of supporting the glass, by a flange formed by the extension of a second inside sheet of the double cover.

Eighth, The arrangement of fastening the glass in these recesses, by means of metal sashes fastened to the coffin-lid, as described.

Ninth, I claim the flanges formed on the outer edges of the sheet-metal blinds, m m, for the purpose of closing the metal blinds, and securing the glass from the intrusion of dust and from other annoyances.

Tenth, I am aware that I have claimed the bi-section of a hinged cover for the joint of the lid of a sheet-metal coffin, according to the breaks in the side-walls; I claim the cover, j, as applicable to a coffin with straight side-walls, in two hinged sections, as described.

SEEDING

THE CONSTRUCTION OF SLED RUNNERS—John M. Spooner, of Springfield, Mass.: I claim making both of the runners and the bearers of a sled or sleigh, or other similar vehicle, of one continuous piece or rod of steel or other metal, substantially as set forth.

SEEDING MACHINES—Enos Stinson, of Plainfield, Vt.: I claim the arrangement and combination of the shaft, F, box, E, shaft, M, arm, O, and box, N, as and for the purpose shown and described.

[This invention consists in a combination and arrangement of a broadcast and drill and hill-distributing device whereby two different kinds of seed may be sowed simultaneously—one broadcast, the other in hills and drills, and either allowed to be used separately when desired.]

BREECH-LOADING FIRE-ARMS—Wm. Mont. Storm, of New York City: I claim such an arrangement of the links, as described, and their connection with the breech-piece and lever, that they shall jump forward and firmly hold the former against the rear of the bore of the barrel after it has ceased its motion transversely to the latter, and, vice versa, release the breech-piece (in opening the breech) before its momentary compression.

Second, I claim the perforated breech-piece, in the manner and for the purpose described.

Third, I claim arranging the horn or head of the hammer, in the manner and for the purpose described.

THE RUNNING GEAR OF SLEDS—R. Sutton, of East Avon, N. Y.: I claim the arrangement and combination of the sliding collar, G, rods, o, reach, E, sliding bolster, F, pendants, I, links, J, and runners, B, as shown and described.

[These sleighs which have two sets of runners are improved by this invention, which consists in a peculiar manner of connecting the front and back runners, and also in a peculiar way of connecting them to their bolsters, whereby the runners are allowed to conform to the inequalities of the surface of the ground over which they pass. The sleigh allows them to turn readily, and prevents them being injured by ordinary fair usage.]

STOVE COOK—Isaac C. Tate, of New London, Conn.: I claim the application of the spring, A, in the manner substantially as set forth and described, and for the purpose described.

WHIFFLETREE HOOKS—Lewis C. Terry, of Chenango, N. Y.: I claim a hook, pivoted or hinged to its supporting eye, which is cut away or flattened on its back, in the manner described, so that the point of the said hook, being in contact, or nearly so, with its said holding eye, will severly constrict a live ring, a staple, a wire, or similar object, in all positions, excepting when turned back upon the said flattened or eccentric part of the eye, substantially as set forth in my description.

I also claim the carriage, with its divided clamp and follower, substantially as described, in combination with a rotary cutter, substantially as described, or any equivalent cutter, for the purpose set forth.

Third, And finally, I claim, in combination with the carriage clamp and follower, the mechanism, or any equivalent thereof, for operating the follower, substantially as described.

MACHINE FOR BOILING BLIND STILES—Danl. Ducham (assignor to D. D. Sweet, James Bromley and E. W. French,) of Pawtucket, R. I.: I claim first. The rack, J, and equivalent arrangement in combination with the sliding carriage, F, and with the dog, o, as described.

Second, The lever, M, arranged with the nose, p, in such relation to the treadle, D, that by its action the dog, o, is operated, as specified.

[A rack, consisting of a series of converging slats, is arranged in such relation to the sliding carriage on which the blind stiles, or other similar articles, are fastened for the purpose of laying out the spaces for holes or mortices, that the length of these spaces can be regulated by moving the rack in or out and that the carriage can be adjusted by a gage to different spaces, and the sliding carriage is operated automatically.]

TRIP-HAMMERS—Bennet Hotchkiss, (assignor to himself and F. S. Collins,) of New Haven, Conn.: I claim improved means of operating the hammer, that is, by an air spring cylinder, substantially as described, or its equivalent, applied to the piston and combined with mechanism, by which a rapid reciprocating rectilinear motion may be imparted to such cylinder, essentially the same as and so as to operate the piston and hammer as specified.

I also claim, in combination with the piston trip-hammer, the air spring cylinder and the mechanism for imparting to the latter reciprocating rectilinear motion, as described, mechanism substantially as specified, for varying the altitude of the path of movement of the cylinder under circumstances as explained, such mechanism as above described, consisting of an eccentric bearing shaft, H, applied in boxes, I, I, and to the crank-shaft, G, of the cylinder, B, substantially as specified.

COMPOSITION FOR CEMENTING IRON—Job Johnson, of East Brooklyn, N. Y., assignor to Chas. D. Archibald, of London, England: I claim the combination and use of lime, bone dust and charcoal, in the manner and for the purpose substantially described.

Second, The combination of the fan cylinder, f f', with the hopper, substantially as and for the purpose described.

[The hopper box in this invention is arranged with a harrow and a smoothing roller in such a way that all of them, or each for itself, can be operated from the driver's seat, the hopper box being hinged and provided with a lever, whereby the box can be brought in such a position that the flap board or valve is not opened by the cam or that the same is opened for the purpose of discharging seed, and the harrow is suspended from a rope or chain in such a manner that the same can be raised from or lowered to the ground by means of a windlass that is operated by a handle from the driver's seat.]

RAILROAD CAR COUPLINGS—David Warren, of Gettysburg, Pa.: I claim the arrangement of the adjustable plate, a, as constructed with the pin, b, arm, A, rock-shaft, R, and guards, B, when the same are operated and used, substantially in the manner and for the purpose set forth.

ROCK DRILLS—Lyman White, of Davenport, Iowa: I claim, first. Placing the bearings, e, of the shaft, D, to which the box, M, and drill carriage, N, are attached in bar, C C, which are fitted in annular parts, c, of the supports, B, and arranged substantially as shown, so as to admit of the facile adjustment of the drill, P, to any angle or position required.

Second, The employment or use of the racks, E, on the bars, C C, in connection with the wheels, F G, on the shaft, D, the screws, H, attached to the bearing bearing, e, by the bars, f, the wheels, I, on the upper ends of the screws, H, and the pins, o, on the cranks, J, the whole being arranged substantially as shown, to feed the drill to its work.

[An engraving and description of this invention will be found on the first page.]

CAR COUPLINGS—Gilbert Yates, of West Dresden, N. Y.: I claim the combination of the chain, H H, clasp, J J, with the bent and lifting rods, B B, grooved parts, C C, and chains, H, arranged in relation to each other, substantially in the manner and for the purposes set forth.

GRAIN-BLTHING MACHINE—Wm. Zimmerman, of Quincy, Ill.: I claim the conduits arranged to receive the grain, measured or operated upon by the first or each revolving scourer, when operated on a horizontal shaft, and conduct it to the center or central part of the second or next revolving scourer, and so on in succession through the whole series of scourers, until it passes out of the machine.

GRAIN-BINS—Daniel D. Badger and W. S. Sampson, (assignor to Daniel D. Badger,) of New York City: We claim the arrangement and combination of the metallic bins, A, in the manner and for the purposes substantially as shown and described.

The buildings in which grain is usually stored are divided into a number of chambers called bins, the grain being carried by elevators to the top and drawn from the bottom. The partitions which constitute the chambers have hitherto been constructed of wood, which has been liable to harbor insects and was not at all fire-proof. This invention consists in making the bins circular and of iron, which will be perfectly fire-proof. Damp grain can be dried in them and they will

not be affected by any atmospheric changes. The spaces between the cylinders can either be used as small bins or as flues for ventilation or heating as desired. A mammoth grain warehouse, constructed on this principle, is being erected in Brooklyn, N. Y.]

MACHINES FOR SHAPING THE BACKS OF BOOKS—John E. Coffin, (assignor to A. G. Gerrish,) of Portland, Me.: I claim, first. The arrangement of the sliding-holding jaws and the reciprocating roller carriage, substantially as described.

Second, Combining the toggle mechanism which operates the clamping jaws and the screw which operates the roller carriage with a cam and pulley, or its equivalent, on the same shaft, in such manner as to make a machine for shaping the backs of books, which is perfectly continuous and automatic in its operation, and from which the books only require to be introduced and removed by the attendant at the proper stage in its operation, substantially as described.

[This invention consists in a novel arrangement of a pair of clamping jaws and a roller carriage for the purpose of holding the book and shaping its back. It also consists in certain mechanism for operating the clamping jaws, whereby they may be adjusted for books of various thicknesses and yet always present them properly to the action of the shaping rollers. And it further consists in so combining the mechanism which operates the jaws and that which operates the roller carriage as to make a machine for shaping the backs of books that is perfectly automatic in its operations.]

MACHINE FOR CUTTING INDIA-RUBBER INTO THREADS—Joseph W. Cox, of Malden, Mass., assignor to Horace H. Day, of New York City: I claim, first. In combination with the concave rotary cutter, substantially as described, the employment of a tube placed in the cavity thereof, substantially as described, for the discharge of a jet of water against the cutting edge, as described.

Second, I also claim the carriage, with its divided clamp and follower, substantially as described, in combination with a rotary cutter, substantially as described, or any equivalent cutter, for the purpose set forth.

Third, And finally, I claim, in combination with the carriage clamp and follower, the mechanism, or any equivalent thereof, for operating the follower, substantially as described.

MACHINE FOR BOILING STILES—Danl. Ducham (assignor to R. A. L. McCurdy, of Sabine Parish, La.) of England Dec. 3, 1858; I claim combining a toothed wheel or pinion on a traveling center and working between guides, with a pair of racks, one of which is stationary and the other movable, having connected to it the part of the fire-arm to be moved, the toothed wheel changing its position or traveling in the same place with the guides, substantially as set forth.

RE-ISSUE

COTTON GINS—David G. Olmstead, of Vicksburg, Miss., assignor of R. A. L. McCurdy, of Sabine Parish, La.: Patented June 26, 1858; Re-issued July 15, 1864; Also, re-issued June 14, 1865; I claim, first. The revolving beam, cylinder and shaft situated in the hopper or rolling box, so that the roll moves around it, when compressed and arranged substantially in the manner described, whether as a single or double device, so as to perform any or all of the functions, as specified.

I also claim discharging the hulls and trash from the roll-box through the sides of the cotton gin, as set forth.

FAREWELL CENTER BROSSES—Abel W. Strode, of Shiloh Falls, Mass.: Patented January 22, 1858; Re-issued June 14, 1859; I claim fastening a bit in its stock by means of a projection on one end and a suitable recess for it on the other, when combined with mechanical pressure or friction that will hold the projection and recess together, substantially as described.

ADDITIONAL IMPROVEMENT

THE CONSTRUCTION OF CHAIRS, SOFAS, &c.—Charles Robinson, of Cambridgeport, Mass.: Patented March 9, 1858; I claim, additional to the original improvement, the spring plate, D, arranged and operating in combination with the supporting blocks, B B, substantially as specified.

DESIGNS

STOVE PLATES—S. W. Gibbs, of Albany, N. Y., assignor to Abbott & Lawrence, of Philadelphia, Pa.

STOVE PLATES—S. W. Gibbs, of Albany, N. Y., assignor to Abbott & Lawrence, of Philadelphia, Pa.

TOPS AND BARS OF SHEET-IRON STOVES—S. W. Gibbs, (assignor to Rathbone & Co.) of Albany, N. Y.

ARMS OF SEWING MACHINES—James S. McCurdy, of Brooklyn, N. Y., assignor to John M. Myers, of New York City.

INVENTIONS EXAMINED at the Patent Office, and advised given as to the patentability of inventions, before the expense of an application is incurred. This service is carefully performed by Editors of this Journal, through their Branch Office at Washington, for the small fee of \$5. A sketch and description of the invention only are wanted to enable them to make the examination. Address MUNN & COMPANY.

No. 37 Park-row, New York.

A Fragrant Breath.

There are various ways of scenting the breath the simplest is by chewing orris root, or any other fragrant substance. Tooth-powders, lozenges, and tincture dentifrices, however, are preferable in many respects, as they can be easily used, and yet leave the mouth free for "chattling." The following is a good domestic recipe for a highly scented tincture to perfume the breath. Take either white wine, such as sherry, or any alcoholic spirit, a quarter of a pint; broken cloves and grated nutmeg, each one drachm (one eighth of an ounce); cinnamon a quarter of an ounce; caraway seeds, bruised; a quarter of an ounce; place all these dry substances into the wine, or spirit, in a half-pint bottle, and let them stand together for several days, agitating them every night and morning to accelerate tincturation, for at least a week. Then strain off the tincture through linen to get it bright. Then add about ten drops of otto of lavender, and if you can afford it, five to ten drops of otto of rose also. Although the recipe is complete without it, yet this latter substance greatly improves the formula. A few drops of this tincture put on to a lump of sugar and masticated will scent the breath. It may also be used with advantage on the tooth-brush, in lieu of tooth-powder, or, mixed with water, it can be used as a gargle. Either way will secure "a breath of flowers."

S. PIESSE.

Treating Scalds and Burns.

Dr. South, a London physician, in a recent work on domestic practice, gives the following for the treatment of scalds and burns—misfortunes to which children are too often subject:

"The object in treating scalds and burns is to keep up, for a time, the great heat or high temperature to which the injured part has been

raised by the scalding or burning, and to lower this by degrees to the natural heat of the body. . . . If the blistered skin be unbroken, the burns may be covered with dry or wet applications, whichever may be handiest or most preferred; but if the skin be broken, wet applications, if they can be got at once, are best, otherwise dry ones must be used; as it is of the utmost importance to protect the exposed sensitive true skin that lies beneath the scar skin, of which the blister consists, from the air, which renders it excessively painful. The best and readiest dry materials are flour, or cotton, or cotton-wadding; the wet are spirits of turpentine, spirits of wine or good brandy, lime-water and oil, lime-water and milk, milk alone; or bread and milk poultice; and all these wet applications must be made of sufficient warmth to feel comfortable to the finger, but not too hot."

—♦—♦—♦—

An American Engineer in the Austrian Service.

It is well known that Austria has of late years been strengthening her fortifications in her Italian possessions. One of the most important has been constructed under the superintendence of an American, H. E. Towle, who graduated at the Lawrence Scientific School, connected with Harvard University. Some three years ago he went to Austria, for the purpose of erecting extensive fortifications at Pola on the Adriatic, about ninety miles south of Trieste. The works were nearly completed at the last accounts, and he hoped soon to be able to return to his country, though he expressed some fears that the French would blockade Pola, and thus his return was prevented.—*New York Express*.

—♦—♦—♦—

Some Things to be Read.

It is hoped that, out of respect to the publishers, every reader of the SCIENTIFIC AMERICAN will, before he lays down this number, carefully read the following brief notices:

BACK NUMBERS are always supplied to our subscribers free of charge, when we have them; but as we are out of many numbers, when parties order and do not receive the missing numbers called for, they may conclude that we cannot supply them. It cannot, of course, be expected that we will write to all those who order, informing them of our inability to furnish the numbers desired.

BOUNDED VOLUMES (XIV.), complete, will be ready in a few days; price, \$2 75.

BINDING.—Subscribers wishing to have their loose numbers bound can send them to our office for that purpose; charge for binding, 75 cents.

AN ILLUSTRATED TITLE-PAGE, printed on a separate sheet, has been provided to accompany this number. We have issued enough to supply all, and we hope that those of our readers who receive their paper from the news agents will be particular to ask for the title-page. It is useful for all those who may wish to bind their volumes.

TO INVENTORS & PATENTEES.—A pamphlet of advice, "How to secure Letters Patent for New Inventions," prepared by MUNN & CO., is furnished without charge. It is useful to all who contemplate making applications for Letters Patent.

THE CONTENTS OF OUR NEXT NUMBER—The first of the new series—we are confident will not disappoint the expectations of our readers. It will contain several interesting illustrations, and a choice variety of reading matter.

—♦—♦—♦—

DESTROYING VINE INSECTS.—At this period of the year, grape vines in cities and large villages are infested with worms, which feed voraciously on the leaves and do considerable injury. The most convenient way to destroy them is by the use of tobacco juice and sulphur. A pound of tobacco steeped for an hour in ten gallons of water, in which two ounces of sulphur have been stirred, makes a solution of sufficient strength, to be sprinkled with a watering-pot over the entire vine. Two or three sprayings may be required before the pests are all destroyed.

—♦—♦—♦—

New Inventions.

Clough & Burrell's Fly Trap.
We always thought that a lighthouse was intended either to warn the mariner of danger or show some friendly channel ; but these inventors call their trap a lighthouse trap, and instead of warning flies of their danger, it, with spider-like guile, allures them to their death.



Our illustration shows one of these traps. The clockwork is in the base, from which rises the central column, which is covered with sand and on which the bait (molasses and sugar) is to be spread with a sponge. A rotating spindle passes through the center of this and carries a platform on the top, from one side of which the catcher projects downwards, close to, but not in contact with the sanded cone. On the top of this platform a cage, containing water in its base, is placed, into which the flies are attracted by the light, when started from their enjoyment of the sweets of life by the catcher. When the spring is wound up and the trap baited, the catcher and cage commence revolving around the sanded cone, and the flies are caught, made prisoners, and finally find a watery grave.

The inventors are I. S. Clough and Saml. R. Burrell, of New York, and the patent was issued this week. Any information or traps may be obtained from I. S. Clough, No. 231 Pearl street, New York.

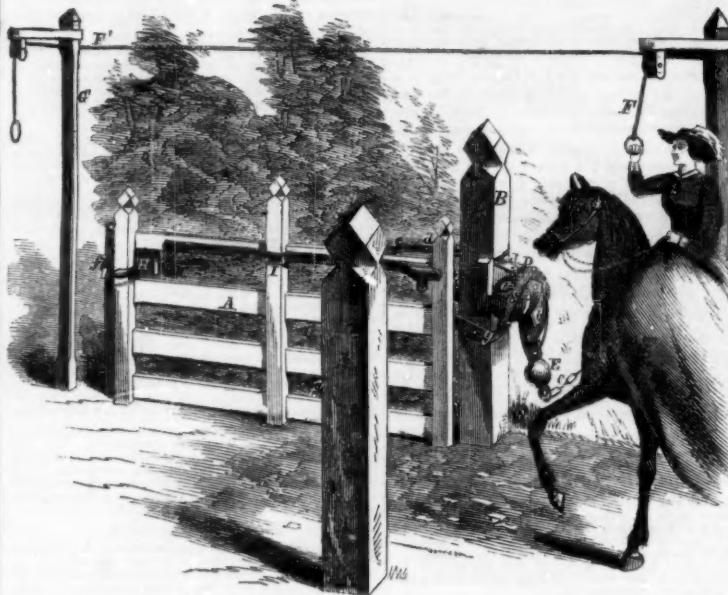
New Farm Gate.

The extreme simplicity of this gate will recommend it to all who wish to have the carriage way to their house, or the entrance to a field or drive, closed with a gate that can be opened by a person on horseback or in a conveyance without dismounting.

The gate, A, is swung as usual from a post, B, to which there is attached a framing that carries a grooved drum, C, and a double lever, *a*. On the end of the drum is a ratchet-wheel, D, in the teeth of which a pawl, *b*, is kept by a spring, the ratchet being connected to a weighted lever, E, the tendency of which is to pull the pawl over the teeth without moving, C; but when the weighted lever is elevated by either cord, F or F', that depend from the posts, G G', and are connected by a chain, *c*, to E, then the ratchet or grooved drum are rotated a quarter of a revolution, or the distance of one groove. In the grooves of C a pin works which is rigidly connected to a lever, *d*, that has its fulcrum inside B, and that is connected by another lever, *e*, and a sliding joint to the gate, the fulcrum of *e* being on the end of a link that is hinged to B. The latch, H, is kept in the catches, *f* and *f'*, according as open or shut, by a small spring, and the inside end of the latch is connected to the double lever, I, that is operated by one arm of *a* striking it and so elevating the latch when in one position, and by the other end of

a striking and depressing the double bent lever, *g*, that operates a pin on the other side of *I*, when the gate is in the position shown. As the grooves in *C* run in opposite directions, it follows that, on pulling the cord on one side the gate to open it, when the other cord is pulled it must close the gate, and vice versa. This gate is very durable; there is no sunk mechanism to get out of order or become clogged with dirt or frozen up, and by removing the pin which connects the lever, *e*, to the gate, a common farm gate is made.

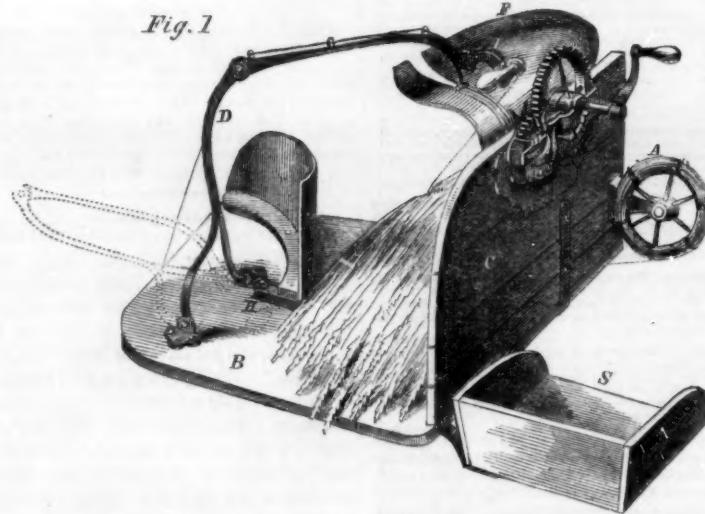
BOGGS' FARM GATE.



There is nothing strange in its appearance to frighten cattle or horses. It is very easily constructed, and is cheap. The inventor is W. T. Boggs, of Cincinnati, Ohio, and the patent is dated Oct. 19, 1858. He will be happy to furnish any further information concerning the invention upon being addressed as above.

The inventor is W. T. Boggs, of Cincinnati.

SHERWOOD'S GRAIN BINDER.

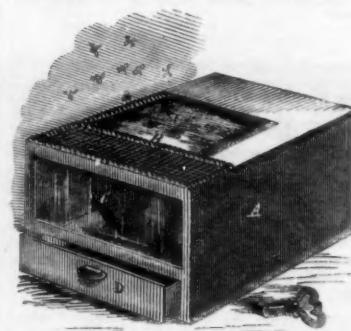


This binder, the invention of Allen Sherwood, of Auburn, N. Y., can be attached to the platform of any reaper, and it requires only the attendance of one man.

poses when the grain is threshed. The sheaves can be easily unwired by a peculiar pull with a gloved hand, although they are not likely to come unfastened by any of the exigencies of transportation from the field to the thresher. Any one can operate it after a little practice, and there is no doubt that it does its work quickly and well.

It is a subject of two patents, Jan. 26 and Sept. 14, 1858, and has been assigned by the inventor to E. P. Senter & Co., of Auburn, N. Y., who will be happy to furnish any further information.

Automatic Fly and Mosquito Trap.



We must confess that it is very cruel to take life and cut short the ephemeral existence of even flies and mosquitoes, but the fact is, they are much too friendly, and have such an uncomfortable way of showing their attachment to our persons, that we willingly seize hold of any means to exterminate these diminutive blood-suckers. Our illustration shows a trap which not only catches but confounds and kills the insects who may happen to be attracted by its seeming innocence.

It consists of a box, A, in one end of which there is a common clock movement, which gives motion to the endless band, B. This band is moistened with a few drops of rum, or molasses and vinegar, and set in motion when the flies attracted on to it are carried down into the body of the box, where a corrugated or winged drum knocks them off into the bright tin drawer, D, that is half full of water, and the flies, being first stunned by the blow of the roller or drum and further confused by the intense light of the polished tin and the humming noise of the clockwork, quickly lose the power of resistance and drown in the water. When mosquitoes are desired to be caught in the night time to keep the room clear enough to give us rest, a light must be placed opposite the glass front, C, in in order that the light may be reflected by the polished tin and so attract the mosquitoes.

It is the invention of S. W. Smith and H. Bigelow, and any further particulars may be obtained from the former by addressing him at 534 Broadway, New York. The patent is dated Feb. 15, 1859.

Inquest on Patents.

A discussion took place a few days ago, in the New York Academy of medicine, on the question whether the Academy should pass an opinion on surgical instruments and apparatus which have been patented. Dr. McNulty contended that it was contrary to the spirit of the Code of Ethics of the National Association for physicians to obtain patents, and consequently that they should not act upon other people's patents. This sentiment met with much opposition, and the general opinion was that surgical appliances should come under a different rule from nostrums ; the former being usually invented, at least in part, by mechanics, who could not do without the patent. A resolution by Dr. McNulty, to the effect that the consideration of no patented article should be entertained by the Academy, was lost.

We have received from the author, F. W. Evans, a very interesting account of the theology, sociology, and history of the Shakers, together with a life of Ann Lee.

Scientific American.

NEW YORK, JUNE 25, 1859.

Special Notice.

All subscribers to the SCIENTIFIC AMERICAN who have paid the full subscription price (two dollars) for the complete volume which has heretofore terminated in September, are informed that by remitting \$1 60 more, their subscriptions will be continued for one year on the New Series commencing July 1st.

CLUBS of subscribers who have paid up to September, and wish to renew their subscriptions or form new clubs at that time, can do so at the club rates, deducting 30 cents each from all the present subscribers and complying to our advertised rates on new ones; for instance a club of 10 subscribers who have paid \$15 for one year's subscription up to September, may have their subscriptions continued till the end of Vol. II., New Series, or one year from July 1, 1859, by remitting \$12.

The Past, the Present and the Future.

In accordance with the announcement (made in No. 35) of our intention to enlarge the SCIENTIFIC AMERICAN, and commence a new series on the 1st of July next, the present number terminates Vol. XIV.; and with the next issue we shall appear before our readers in a new form, with new type, and thus introduce "Volume I., Number 1, Enlarged Series"—a sixteen-page paper instead of an eight.

The SCIENTIFIC AMERICAN will next week enter upon its fifteenth year; and we hope we shall be able to show to our friends and the public that it still has a vigorous existence, and that it enters upon a new career with the intention of proving itself still more worthy of the confidence and support of a generous and enlightened reading public.

We know from a long experience that our journal has a host of friends everywhere; and the hearty response which has been made towards it, in reference to the proposed scheme of enlargement, assures us that we have not taken this step in vain. We desire here to repeat—what we have often had occasion to do—our warmest thanks for the generous support and confidence which has been given to us during the thirteen and a half years in which we have had control of this journal. Without multiplying words on this point we will proceed at once to give a few details concerning the enlargement and alteration in the form of the SCIENTIFIC AMERICAN. The necessity for the change has long been apparent, not only to ourselves but also to our readers, and the difficulty against which we had to contend was principally one of prime cost; and, as our custom is, we sat down to count the expense and to consider how we could best accomplish our objects.

To double the present size of the journal without resorting to the expedient of using a very inferior quality of paper is out of the question, as no sane man would undertake to publish a journal twice the size of this and use equally as good paper for \$2 a year, with our present liberal clubbing rates. We thought of a number of plans whereby we could serve up a more acceptable weekly entertainment to our readers, such as a double sheet monthly or bi-monthly, or a loose supplemental sheet weekly; but a little experience in both these particulars convinced us that neither plan would be satisfactory. We therefore resolved, as the last resource, to change the form of the journal by using a larger sized sheet but folding it into a sixteen-page paper instead of an eight; and thus slightly reducing the size of the pages. The size of the sheet upon which each number of the new volume is to be printed is 28 inches by 40, or just one-half larger than

the sheet now in the hands of the reader; and by a better and more economical arrangement of the space we shall be able to present to our readers almost a double quantity of useful reading matter, and at the same time afford them a more compact, and, we believe, a more convenient volume for binding and preservation. In reference to the amount of reading matter we would further explain, to render this point clear, that, in the present issue, the letter-press covers a total available space of 872 inches, while in the new form the total available space will be 1,536.

It must be apparent to all that this improvement will open to us a wider field for the expression of thought and the results of investigation than we have hitherto enjoyed; and while we do not intend to depart from our legitimate sphere, wherein we have so long labored and wherein there is yet much to be accomplished, we hope at the same time to develop more fully the varied operations connected with invention and the industrial arts and sciences.

By the pen and the aid of the graphic pencil we shall delineate, week by week, the actual progress of invention, discovery and manufactures; and, as heretofore, the SCIENTIFIC AMERICAN will be the only reliable organ of all those ingenious men who, by their continual discoveries in various fields, are ever advancing the world in the knowledge and application of the arts and sciences; and thus the beneficial influence of this journal will be made to extend to all classes of society.

We shall publish the proceedings of scientific associations and bodies so far as their deliberations bear upon the interests of the Inventor, the Mechanic and the Manufacturer; also reports of patent trials, and biographical notices of scientific men and inventors—a feature which we shall endeavor to render useful and attractive. As examples of this kind we refer to our recent notices of Humboldt, Lardner, Olmsted, Watt, Robertson, and Commissioner Bishop.

As heretofore, we shall pay particular attention to the department devoted to giving valuable information to our correspondents, which we shall endeavor to make still more varied and interesting. We shall also vigilantly watch the operations going on in our markets in metal, lumber, and such other departments as may be deemed useful to our readers.

With the foregoing hints and glimpses of our future course, we close our labors on the present volume; and cheered by strong assurances of cordial support from thousands of our subscribers, we shall work on vigorously, trusting that all who already read the SCIENTIFIC AMERICAN will confidently believe that our past exertions form a partial exponent and satisfactory guarantee of our future efforts.

Fawkes' Steam Plow.

A powerful steam plow of thirty horse power having been constructed in Philadelphia for Mr. J. W. Fawkes, of Lancaster, Pa., the inventor issued circulars of invitation for a grand exhibition of its powers, to take place at Oxford Park—about 10 miles from Philadelphia—on the days of the 15th, 16th, and 17th inst. Having taken a deep interest in the subject of steam-plowing, we accepted the invitation of Mr. Fawkes to be present, and expected to be highly gratified with the display. We regret to state that, from the defect of two pinions gearing into the wheel on the main drum, our anticipations were doomed to disappointment. On Wednesday (the 15th), after the plow had traveled round the race course, it was set to work, but had not proceeded above 30 yards when the cog of the pinions referred to were ripped off, and further operations entirely defeated. We regretted the result as a great number of persons, like ourselves, who had come from a distance to witness the operation, felt mortified, both on their own account and that of Mr. Fawkes. He deserved better success, as his

plow contains some good features and had made a very successful private experiment on the day previous. The plow is 18 feet long by 7 wide, has two horizontal cylinders of 9-inch bore and 15-inch stroke. The boiler is a "vertical tubular," and carries 150 lbs. of steam. The principle feature about it is that the whole frame and machinery are supported on a large rolling drum six feet wide and six feet broad. The power of the engine drives this drum, and it drags a gang of eight plows behind it in an adjustable angular frame. The motion from the crank-shaft to the drum shaft is imparted through cog-gearing, and it was defective teeth in one of these cogs which caused the break-down. It will soon be in operation again, and, with better pinions, it will no doubt give satisfaction, and may yet be the successful competitor for the prize of \$6,500, offered by the Illinois State Agricultural Society.

Humboldt's Will.

The late Baron de Humboldt has bequeathed to his domestic, Seiffert, who lived with him thirty-three years, all his immense library, all his furniture, and all his articles of value, with the exception of a few which he charges him to present to certain persons. His manuscripts, however, are not comprised in the donation, and among them is a geographical work of greater extent than any hitherto published. The domestic is his testamentary executor. The money in hand at the time of the baron's decease was under five hundred thalers. Of this sum he had given four hundred thalers to the servants, with written instructions to apply the money to the expenses of his funeral. As a proof of the little value M. de Humboldt set on personal distinctions, it may be stated that the great number of decorations which he had received from the sovereigns of all countries were found lying pell-mell in a cupboard. His legal heirs, the sons and grandsons of his brother William, had caused the property to be put under seal, not being aware of the donation to Seiffert. This old and faithful servant had some years before been appointed guardian of a royal palace at his master's request, but the king dispensed with his fulfilling the duties of his post during the lifetime of Humboldt.

To Stop Bleeding of the Nose.

Bleeding from the nose is very frequent in young people. Generally this is checked by the person sitting upright, bathing the nose externally with cold water, or vinegar and water, and sniffing it up the nostril. If, however, it continue, a moderate pinch of powdered alum may be put into a couple of tablespoonfuls of water, and thrown up with a squirt; or a plug of cotton dipped in this wash may be passed into the bleeding nostril, for generally it is only one side which does bleed; but care should be taken to fasten a strong thread securely round it, lest it be pushed in or slip so far back into the nostril that it cannot be got out without much difficulty. When there is frequent disposition to bleeding from the nostrils, it is necessary to prevent costiveness, and to take some saline purge continually, so as to keep the bowels rather relaxed. Persons who are subject to severe headaches, followed by bleeding of the nose, should never try to arrest the latter suddenly, but allow it to bleed freely for some time, in order to prevent congestion of the brain.

THE ATLANTIC FERRY.—Twenty-two steamships arrived at this port, Boston, and Quebec, during the month of May, from Europe. Twenty-one steamers in thirty-one days! Almost as many went the other way. It is only twenty-one years since the little Cork steamer, *Sirius*, the first to cross the Atlantic, made her appearance off the Battery. She was eighteen days in making the passage. Now it is accomplished in nine days. The arrival of the *Sirius* produced a sensation throughout the country. Now the arrival of twenty-two steamers in one month scarcely excites a remark. *Tempora mutantur.*

Cast-Iron Stairs.

When a fire takes place in a dwelling, in general the staircase, being of wood, goes early; means of escape are cut off; the inmates can neither get down to the street, nor up to the trap-door, so as to get on the roof of the next house. It has been suggested, as a remedy, to have the stairs made of cast iron; the one end of the steps to be inserted into the wall when the house is being built; the other end of the steps to be made fast in an upright square or round iron pillar, going from the ground to the top of the house. The stairs could be carpeted, and the steps made highly ornamental, with eyes cast for the stair-rods. Of course we only refer to private dwellings, as iron stairs of a very durable and ornamental character have been erected in several of the cast-iron stores in this city.

RIFLE CARTRIDGES.—The conical bullets for rifles sometimes oxydize and become too large for the bore of the barrel, and from this cause some of the British troops have experienced great trouble in India. To prevent this evil Capt. J. Norton recommended the following method of making cartridges:—"If the shot is coated with thin tough paper pasted on its cylindrical body, and a little forward on its conical front, the lead cannot then oxydize, and the shot preserves its proper size in all climates. The oxyd of lead is a poison, and causes wounds to mortify. This fact ought to be made known generally, and without any delay."

FRIGHTENING RATS.—An old work on catching rats contains the following simple method of banishing these pests from houses. The author says: "I shall here give the reader another maxim I have often followed very successfully. Take a pint of common tar, half an ounce of vitriol, and a good handful of common salt: mix them all well together in any old deep pan. Soak some pieces of paper, and place enough of this into the holes, sufficient to stop them, and then let the bricklayer make good after you; and if you should find any of the holes opened again, it is quite certain you did not put in a sufficient quantity; then put in some more; and if it is done as it ought, they will never approach there again while either taste or smell remains in it."

A REMARKABLE INSECT.—A paper has been sent to the Paris Academy of Sciences by M. Dafour, which describes the anatomy of a small insect not more than four millimeters (about the sixth of an inch) long, which possesses an organism as complete as a large vertebrate animal. It has a nervous system, brain and ganglia and a respiratory system. All the members of this insect are very minute and fragile, and have excited the wonder of the Parisian savans. We do not doubt it; Paris savans are an enthusiastic class of men.

SUBSTITUTE FOR TOBACCO.—"Any person," says the Colonial (West India) Standard, "who knows anything of the fragrance of the Pimento when in full blow, may form some idea of it by a pipe charged and lighted with the dried berry simply crushed in coarse bits. It cannot be well smoked in short pipes, but with the long cherry stick of a meerschaum it affords a treat beyond anything known in the use of tobacco. The coolies and native laborers are bringing Pimento into use in the place of tobacco."

A USEFUL HINT.—If a man faints away, instead of yelling out like a savage, or running to him to lift him up, lay him at full length on his back on the floor, loosen the clothing, push the crowd away so as to allow the air to reach him, and let him alone. Dashing water over a person in a simple fainting fit is barbarity. The philosophy of a fainting fit is, the heart fails to send the proper supply of blood to the brain; if the person is erect, that blood has to be thrown up hill; but if lying down, it has to be projected horizontally, which requires less power, as is apparent.

G. R., of Iowa.—Your wheel of 4½ feet diameter and 8 feet tread will run at the rate of 80 revolutions per minute. Its power, with 120 inches sluice area, will be about one-horse, without deducting the usual per cent. for friction, &c. There is certainly a very small quantity of water in your stream.

J. B., of N. Y.—A column of water pressing on a wheel will not give it any motion, although it may be

50 feet high, unless it escapes continually. It is the quantity of pressure multiplied into the velocity of the water which constitutes its power; water without motion exerts no mechanical power. You are pursuing an *ignis fatuus*.

J. J., of Me.—You cannot obtain a patent for a water-wheel operating in a vacuum chamber at the top of a fall, the water being forced through the bucket by atmospheric pressure. This principle was patented more than twenty years ago by Z. Parker. Transparent protractors, or horn, can be obtained in this city, but not the material for making them, so far as we know.

W. W., of Georgia.—If spent oils and tallow are treated with weak sulphuric acid to remove the dirt, they may be washed with water, and afterwards used for making soap.

Money received at the Scientific American Office on

account of Patent Office business, for the week ending Saturday, June 18, 1869:—

S. & F., of N. Y., \$100; A. H., of Ill., \$50; B. R., of Me., \$50; B. M. D., of Ill., \$25; N. B. of N. Y., \$20; E. B., of Mass., \$20; M. B., of N. Y., \$25; J. B. Q., of N. J., \$25; G. & F., of N. Y., \$20; E. D. of Ark., \$20; G. E. H., of N. Y., \$20; P. S., of N. Y., \$25; I. & S., of R. I., \$20; H. J. H., of Mass., \$20; M. L. T., of Wis., \$20; T. S., of Cal., \$20; H. L. B., of Mich., \$25; D. E., of Ill., \$20; J. L. W., of O., \$25; D. Q., of N. H., \$25; H. C., of Ga., \$20; D. C. B., of N. Y., \$20; E. N., of Mass., \$20; W. H. H., of Cal., \$20; W. J. K., of Ga., \$15; E. C., of Mass., \$20; A. E., of Cal., \$25; P. & C., of Ind., \$25; E. & F., of Ill., \$20; A. H. C., of R. I., \$20; G. W. B., of Miss., \$20; J. & S. N. D., of Mich., \$20; J. B. S., of N. Y., \$20; W. P., of Mass., \$25; L. B., of Ala., \$25; H. B., of N. Y., \$10; H. K. S., of Mass., \$25;

W. D. N., of N. Y., \$22; M. B., of N. H., \$40; C. & M., of Ill., \$20; C. F., of Conn., \$20; W. H. S., of N. Y., \$20; P. McK., of S. C., \$250; C. W. S., of N. Y., \$20; M. K., of Iowa, \$24.

Specifications drawings and models belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, June 18, 1869:—

L. B., of Als.; A. Le B., of Paris; H. H., of N. Y.; J. K., of Mass.; J. F. S., of N. Y.; J. F. W., of N. Y.; B. Q., of N. J.; W. D. N., of N. Y.; H. & H., of Mich.; H. K. S., of Mass.; J. P., of N. Y.; H. H., of Mass., 2 cases; P. & C., of Ind.; M. B., of N. Y.; M. B., of N. H.; D. Q., of N. H.; W. H. H., of Cal.; S. G. R., of Mass.; B. M. D., of Ill.; R. L. B., of Mich.; B. R., of Mo.; F. & S., of N. Y.; W. P., of Mass.; P. S., of N. Y.

Illustrations.

A
Addressing Newspapers (Lord), 105
Alarm, Clock and Lamp (Matthewson), 16
Alarm, Boiler (Miller), 44
Alarm, Burglar's (Robbins), 133
Alarm, Steamboat and Water Gage (Hollings), 157
Amalgamator, Gold (Fisher), 49
Apple Corer (Alcott), 244
Ash Sifter (Cummings), 256

B
Balance, Knife and Saw Combined (Smith), 296
Ballot Box (Cummings), 188
Bath, 78
Bath, Shower (Mansfield), 108
Bedstead (Warwick), 160
Bedstead and Bureau (Hoffman), 132
Bell Shipper (Well), 241
Belts, Enormous with, 216
Bevel and Square (Bronson), 44
Binding Machine (Sherwood), 248
Blind, Window (Fether), 8
Blind, Window (Kelly & Livingston), 168
Blowpipe (Holley), 32
Boilers, Steam (Montgomery), 129
Boilers, Steam (Pierce & Griffiths), 316
Boilers, Steam, Blow-Off for (Washington), 222
Boiling (Holt), 248
Booby, Record (Gresham), 88
Burner, Gas (Tozer), 184
Butter Worker (Smith), 24

C
Callipers (Gould), 224
Can, Preserve (Manley), 24
Can, Preserve (Cotton), 202
Cap for Trace Fastening (Gink), 293
Car Seat (Woodard), 17
Car Seat (Painter), 76
Car Seat (Hartman), 81
Car Seat (Case), 133
Car Seat (Child), 349
Car, Sleeping (Slabot), 232
Car, Sleeping (Jackson), 329
Car Brake and Starter, 176
Carpet Sweeper (Ferris), 52
Center Board for Vessel (Pratt), 300
Chair, Railroad (Crocker), 212
Chair, "Graham," 309
Chair and Bed for Invalids (Favor), 59
Chair and Lounge (Gardner), 308
Choking Strap for Horses (Norwell), 272
Churn, Washing Machine, &c. (Swan), 100
Clip, Picker (Mills), 320
Coal Washer (Kane), 197
Commissioner of Patents (Bishop), 312
Cooler, Water (Phelps), 200
Crank Motion, 256
Crimper, Hair (Irvine), 304
Cut-Off (Colman), 344
Cyclo-ellipto-Pantograph (Queen), 60

D
Distilling Apparatus (Kessell), 291
Drill, Self-feeding (Wakely), 61
Drill, Rock (White), 345
Dyeing Operations, 88

E
Electric Apparatus for Extracting Teeth, 118
Elevator, Hay (Gadding), 164
Engine, Pulp (Kingland), 33
Engine, Steam Fire (Lee & Lined), 99
Evaporator, Sugar (Cook), 141

F
Felly Bending Machine (Maun), 100
Forge, Portable, 136
Freezera, Ice Cream (Massey), 322
Furnaces, Boiler (Skelly), 8
Furnaces, Wet Fuel (Gautz), 12

G
Gage, Valve and Pressure (Wals), 21
Gas Apparatus (Hendriks), 57
Gas Burner, Self-closing (Marshall), 49
Gate, Automatic (Rowland), 249
Gate, Farm (Boggs), 24
Governor, Fan (Whittier), 323
Governor for Steam-engines (Porter), 32
Governor for Steam-engines (Broughton), 181
Governor for Steam-engines (Seagard), 297
Governor Valve (Cope & Hodgson), 327
Grate Bar (Savage), 141
Grain, Measuring and Bagging (Barker), 233

Halter for Horses (Hawkins), 76
Hanes (Cogswell), 244
Hanger for Shafting (Johnson), 53
Harrow and Seed-Planter (Root), 240
Hide-shaving Machine (Arnold), 255
Horse Power (Rider), 156
Horse Skin (Horn), 238
Hounds, Portrait of, 226
Husker, Corn (Meacham), 100
Husker, Corn (Spear), 264
Hydrant (Bryant), 336

K
Knitting Machine (Aiken), 321, 318

L
Lantern, Signal (Howard), 53
Lantern (Keesler & Frey), 148
Lathe Machine (Hancock), 273
Lathe Machine (Pehey), 289
Lathe (McNary), 149
Lathe, Feed Motion for (Rennie), 72
Lever (for Kenny), 338
Loom, Artificial (Palmer), 205
Loom (Gould), 113
Loom (Thompson), 216
Loom (Scott), 9
Loom (Chesetham), 313

M
Match Safe (Morgan), 169
Meter, Gas (Lyon), 173
Mill, Cooler (Mansfield), 292
Mill, Corn and Cob (Scarlett), 24
Mill, Grinding (Beardmore), 116
Mill, Hominy (Fahrey), 121
Mill, Paint (Thomas), 25
Mill, Quartz (Williams), 104
Millstone, Balance Iron (Glover), 24
Motion, Changing (Smed), 296
Mower and Reaper (Jerome), 164

O

Odometers (Work), 300
Ozonescope (Burt), 96
Our Manufactures —
Ho & Co.'s, 126
Wire Rolling Co., 202
Ovens (Jennison), 244
Oyster Opener, 111

P

Paddle and Screw, 96, 112, 120, 140
Paddle-wheel (Locke), 176
Padlock (Schneider), 180
Paper Bag Machine (Keller), 54
Pedometer (Herring), 233
Peg Float (Pearce & Hayman), 288
Pendulum, Compensating (Goffinberry), 240
Plane (Graham), 234
Plating Machine (Cottrell), 159

R

Radiator (Chester), 50
Rake, Horse (Squier), 23
Refrigerator and Milk Closet (Nash), 52
Refrigerator (Bartlett), 238
Refrigerator (McAvoy), 239
Refugee, French (Lambert), 305
Retort Cover (Floyd), 168
Retort, Gas (Symmes), 184
Revolver (Newbury), 89
Rope Machine (Adams), 209
Rope Serving (McLaughlin), 230

S

Sash Fastener (Williams), 224
Sash, Window (Huey), 284
Saw Gunner (Wolf), 116
Sawing Machine (De Witt), 1
Sawing Machine (Titus & Sharp), 29
SCIENTIFIC AMERICAN OFFICES, 267
Screw Cutter (Evarts), 41
Seed Planter (Jones), 4
Seed Planter (Morehouse), 20
Seed Planter (Drake), 224
Seed Planter (Lyons), 228
Sewing Machine (Kirk & Fox), 76
Sewing Machine (Wilcox & Gibbs), 165
Sewing Machine (Burnett & Broderick), 241
Shoe for Vehicles (Hoffmeyer), 49
Shingle Machine (Freeman), 272
Shingle Machine (Yates), 322
Shovel (Sabatini), 120
Sleigh Runner Attachment (St. John), 126
Sifting Machine (Hildreth & Bailey), 213

T

Satin Machine (Lantz & Russell), 176
Smut Machine (Lester), 200
Smut Machine (Woodward), 248
Smut Machine (Tobin), 239
Spinning Machine (Pittman), 236
Spinning Flyer (Sawtell), 252
Steave Jointer (Halderman), 217
Steamer (Winans), 65
Stick, Composing (Calhoun), 220
Stool, Music (Leach), 41
Stone Gatherer (Bishop), 57
Stove, Cooking for Ships (Beardsley), 160
Straw-cutter and Masticator (Sinclair), 124
Switch, Railroad (Dodge), 149

T
Table, Extension (Bader), 152
Threshing Machine (Harvey & Becker), 12
Trace Buckle (Smith), 316
Trap, Roach (Shell), 68
Trap, Fly (Smith), 345
Trap, Fly (Clough & Burrell), 348

V

Valve Cock (Macdonald), 64
Valve, Governor (McCray), 144
Valve, Steam-engine (Michener), 28
Valve, Steam-engine (Stewart), 73
Valve, Steam-engine (Wickes), 193
Vises (Morris & Coltar), 73

W

Washing Machine (Price), 26
Washing Machine (Allen), 56
Washing Machine (Jordan), 126
Wheel, Paddle (Orcutt), 184
Wheel, Wind (Butterfield), 228
Windmill (Buggles), 64
Windmill (Whitman), 276
Wrench and Screw-driver (McKenzie), 196

X

Fabric, To Waterproof 249, 268
Fair of the American Institute 37

Farm Lands, Draining 301

Farming Memoranda 268

Father, To Dye a Bright Scarlet 230

Films, How they are Made 23

Filter for Clister 148

Fires, To waterproof 269

Fires on Land and Sea, How to Suppress Them 45

Fire-arms, Improvement in 312

Fish, Treatment of 231

Floor Covering 249

Flowers, Artificial 25

Frames, To Re-gild 179

Franklin, Homage to 214

Fruits, Preservation of 27

Fuel for Locomotives, 214

Furnaces, Balance Iron (Glover), 24

Gardening, Progress of 233

Gases, Fire-extinguishing 203

Gates, Fire-extinguishing 203

Patent Claims.

4

- Patent Claims.
- A
- Acids, Fatty 45, 174
- Adding Machines 35, 74, 274, 276, 284
- Air Blowing Apparatus 218
- Alarm, Burglars 26, 58, 62, 191, 198, 237, 328
- Alarm, Beacon 2
- Alarm, Railway 150
- Alarm, Steam Boiler 42, 290
- Alkalies, Caustic 191
- Alkalies, Caustic, Putting up 123
- Alkalies, Caustic, Boxes for Preserv-ing 191
- Altitudes, Measuring 135
- Altitudes, Taking 191
- Aluminum, Preparing 67
- Aluminum and Calomel, Preparing 67
- Amalgamating Articles 114, 166, 174, 235, 242, 299
- Amalgamating Rifles 218
- Anchor Tripper 293
- Apple Cutter and Corer 218
- Apples, Grinding 234
- Aquaria 45, 82
- Arithmetical Proof Rule 67
- Arms, Artificial 165 (2)
- Astronomical Instrument 90
- Augers for Wood 107
- Augers, Attaching Cutter Lips to 135
- Augers, Expanding 260
- Axes, Making 243
- Axes, R. 34, 338
- Axes, Attaching Thills to 123, 150, 226, 323
- Axes, Preventing Friction of 198
- Axle Beams for Locomotives 142
- Axle Box for R. R. Cars 331
- B
- Bag Machine, Pasting Apparatus for 107
- Bags, Carpet 275
- Bags, Mail 208, 306 (2)
- Bags, Mail, Fastener for 190
- Bags, Fastener 323
- Bagger, Bolting and Measuring 315
- Baking Articles Composed of Carbon 10
- Balance and Knife Combined 18
- Balde Bands 243
- Balde Bands, Tightening 2
- Balde Bands, Fastenings for 2, 18, 58, 67, 134, 183, 218, 234, 235, 266 (2), 267, 275, 306, 323
- Balls, Billiard 10
- Balls, Patching Rifle 67
- Balls, Box 43
- Ballons 230
- Bands for Binding Grain 267
- Bandages 123, 199, 211
- Bank Notes, Printing 339
- Barley Pearl 293
- Barrel Machinery 43 (2)
- Barrel Packer 254
- Barrels, Champering and Crozing 50, 183, 226
- Bar, R. R. securing ends of 82, 106, 107
- Bars, R. R. 246
- Baths, Photographic 43
- Baths, Shower 123
- Bathing Apparatus 166, 175
- Bats for Felt Cloth 67
- Bats, Cricket 210
- Bats, Fastener 198
- Bats, for Coal Shirts 333
- Bats, for Coal Shirts 333
- Bats, Bed 274
- Bedstead, (Design) 19
- Bedsteads, 19, 58, 227, 267, 283
- Bedsteads, Fastening for 18, 143, 242
- <div data-bbox

Liquors, Malt, Preserving 50
 Locomotives for Propelling Plows,
 etc. 298
 Locomotives, Magnetizing the Driv-
 ing Wheels of 276
 Locomotives, Attachment for 346
 Lock Attachment 339
 Locks 3, 26, 33, 75, 82, 93, 123, 142, 210,
 218, 219, 223, 267, 315, 338
 Locks, Alarm 1, 272
 Locks, Auto 40, 51, 74
 Locks, Can for Throwing Bolts in 42
 Locks, Door 18, 190
 Locks, Gun 190
 Lock and Key 74
 Locks and Latches 234
 Locks for Piano Fortes 204
 Locks, Ring 166
 Locks, Safe 90 (2)
 Locks, Trunk 33
 Locks, Watch Case 59
 Logs, Rolling and Piling 3
 Looms 10, 151, 345
 Looms, Fringe 33
 Looms, Harness, Filling Needles in
 251
 Looms for Weaving Skirt Fringe 2
 Looms for Weaving Hair Cloth 51
 Looms for Weaving Figured Fabrics
 45
 Looms, Power 90, 226
 Looms, Picker Staff for 93
 Loune, Shuttle Box for 142
 Loums for Weaving Plaids 330
 Loom Temples 338
 Lounge 174
 Lubricating Car Axles #3
 Lubricating Composition 106
 Lubricator 55, 292
 Lumber, Sevening 330

M

Machinery, Connecting and Discon-

Machining, Coring and Dressing
 Casting 320
 Mallets, Construction of 250
 Manacles 299
 Manure, Artificial 158
 Mashing Apparatus 219
 Match Box 120
 Match Safe 51
 Match Splints, Making and Arranging in the Dipping Frames 201
 Matches, Friction Composition for 155
 Matches, Making Water-proof 295
 Mattresses 63
 Mattresses, Elastic Material for 83
 Measure, Grain 143
 Measuring and Recording by the Tape 114
 Measuring Machine for Cloth 331
 Measurer, Fluid 283
 Meal and Flour Making 183
 Mechanical Movement 75
 Melodium 90
 Metal Cutter, Machine for Cutting 26
 Metals, Cutting 51, 192
 Metres, Dry Gas 43, 322, 331
 Meters, Fluid 123
 Metars, Gas 42
 Meters, Water 219, 290
 Mill Drivers 331
 Mills, Burn Stone 183
 Mills, Cider 66, 298
 Mills, Coffee 243
 Mills, Cooking and Feeding Material 288
 Mills, Corn Cob 199, 292, 315, 331
 Mills, Fanning 183
 Mills, Grinding 91, 150 (2), 155, 162 (2),
 219, 250, 252, 283, 291, 294, 315, 330,
 331, 339
 Mills, Grinding Surfaces for 158
 Mills, Honing 125
 Mills, Saw 107, 114
 Mills, Spice 218
 Mills, Sugar 22, 224 (2), 290
 Mills, Tongs 2, 17, 21, 319
 Milestones, Balancing 194
 Milestones, Bush for 322
 Milestones, Dressing 183, 207
 Milestones, Dressing 346
 Milestones, Hanging 2
 Milestones, Tram-staff for Facing 218
 Mincer, Meat 254
 Mining Machine, Coal 67
 Miter Box 135
 Molds, Cutting 259
 Molds for Forming Artificial Teeth 266
 Molds for Steel Castings 281
 Molding Machine 223
 Moldings, Burnishing 298
 Moldings, Cutting Curved 299
 Moldings, Enameling 255
 Moldings, Operating Rotary Cutters for 307
 Molding, Laying Metal Leaf on 306
 Moldings, Preparing for Picture Frames 255
 Money Boxes for Stages 298
 Monuments, Sepulchral 227
 Mop and Brush 53
 Mop Handles 315
 Mop Head 107
 Mortising Machines 27-28
 Mortising Machine, Reversing the
 Chair 51
 Motion Converging 190 (2), 205, 209,
 299
 Motion, Pendulum 74, 13, 18, 280
 Motive Power 257, 271, 294
 Motors, Water 65
 Mowing Machines 54, 55, 180, 391, 397
 Musical Instruments 394
 Musical Instruments, Good 294
 Musical Fig "rums" and Wind 151

1

Nail Heads, Plating 197
 Nail Machine 114
 Nails, Wrong 22
 Needles, See ¹ 197, ² 94
 Needles for Knitting Machines 128
 Needle Case and Holder 124
 Needle Threader 124
 Needle Wrappers 24
 Nut Blanks 24
 Nut Crackers 214, 230
 Nut Machine 26, 50, 128
 Nut and Washer Machine 199
 Nuts, Preventing Unscrewing 26

174

Oil, Pyrogenic 142
 Ordnance, Chamber for 238
 Ordnance, Loading 234
 Ore Crusher 315
 Organs 123, 239
 Ovens, Bakers' 36, 182 (5), 183, 323
 Ovens for Cooling Castings 232
 Ovens, Heating by Steam 34

1

Pails 190
 Pails, Scrubbing 182
 Paint Composition 68
 Pans, Bread (Design) 2

6

— 96 —

Pans, Milk 251
 Paper, Apparatus for Wetting 88
 Paper, Apparatus for Coloring 27
 Paper, Drawing 239
 Paper Feeder for Printing Presses
 27, 59, 82
 Paper-Folding Machine 191 (3), 266
 Paperhangings, Turning the Edges of
 43, 199
 Paper, Marking and Ornamenting
 243
 Paper, Making from Reeds 213
 Paper, Model 194, 195

Pans, Milk 251
Paper, Apparatus for Wetting 22
Paper, Apparatus for Coloring 27
Paper, Drying 239
Paper Feeder for Printing Presses 27, 55, 82
Paper-Folding Machine 191 (3), 266
Paperhangings, Turning the Edges of 48, 199
Paper, Marking and Ornamenting 241
Paper, Making from Reeds 218
Paper, Making from Wood, 45, 135
Paper, Machine for Addressing 10, 94, 218, 290, 246
Paper, Manufacturing 246
Paper, Rendering Incorrigible 22
Patterns for Cox Wheels 266
Pavements, Iron 55, 142, 183, 191, 193, 226, 237
Pavements, Sidewalk 11
Pavements, Street 166
Peach Cutting and Stoning Apparatus 234
Pearl Jewelry, Connecting 200
Pearl for Competing 261
Peg Machine 90, 133, 205, 267, 275
Pegging Jacks 143
Pegging Machines 27, 200, 267, 291 (6)
Pen, Fountain 63, 83
Penholder, 58, 198, 256, 291
Pen-Wiper and Paper Weight 227
Pennell Sharpener 42
Pencils, Composition for 330
Pendulum for Clocks 143
Pessaries 211
Pestles for Cleaning Clothes 143
Photographs, Instrument for Enlarging 242
Photographs on Wood 190
Panforades 219, 298, 323, 346
Panforades, Pedal Attachment for 75
Panforades, Arrangement of Keys 314
Pancake Legs 238
Pank Handle 250
Pans for Breakwaters 274
Pancake Driver 250, 298
Pan-Sticking Machine 19
Pans, Shield 74
Papes, Clay 17, 323
Papes, Composition for Living 167
Papes, Drain 233
Papes, Waterproof Cement 322
Papes, Metallic 323
Papes, Packing 62, 266
Papes, Padding Alarm 239
Patches, Ice 53, 227, 266
Pache, Bench 208
Pache, Hand 307
Pache, Ione, Securing to Stocks 2
Pache, Stock, Bench 283
Pacher, Securing Bits in 339
Pachers for Irregular Surfaces 42
Paching Machine 43
Paching Machine, Rotary 234, 299
Paching Machine, Adjusting Knives in 290
Paching Machine, Feed Device for
Paching Machine, Hand 315
Paching Cutter, Rotary 51
Paching Protector 306
Pachs 19
Pachs, 10, 24, 35, 58 (2), 74 (2), 82, 123, 135, 166, 174, 216, 218, 319, 327, 250, 274, 306 (4), 307, 346.
Pachs, Grain 191
Pachs, Hillside 2, 307
Pachs, Mole 18, 107, 151, 198, 243, 250, 266, 275, 283
Pachs, Sack 24, 190
Pachs, Securing the Clevis to 346
Pachs, Beams 210
Pachs, Handles, Forming, 323
Pachs, Press and Drill 26
Pachs, for Blasting Rocks 314
Pachs, for Making Bottles, 276
Paching Metals 123
Paching Wheel 274
Pachotic 367
Pacts for Clothes' Lines 38
Pacts, Tea and Coffee 122
Pacts, Piggers, 10, 166, 218, 251, 307
Pacto Planter 315
Pacto, Applying 275
Pacto, Accumulating and Transmitting 220
Pacto, Mechanical 34
Pacto, Can 135
Pacto, Hand Printing 75 (2)
Pacto, Hydraulic 174, 288
Pacto, for Embossing V-Velts, &c. 74
Pacto, Lithographic Printing 151
Pacto, Printing and Numbering 10
Pacto, Printing Automatic Grippers 76
Pacto, Punching and Stamping 298
Pacto, Seal 210
Pacto, Sugar Cane 346
Pacto, Self-Acting 331
Pacto, Cheese 66, 191, 242, 250
Pacto, Copying 67, 151
Pacto, Cotton 2, 66, 107, 168, 226, 227, 231, 230, 283, 314 (2) 381
Pacto, Printing 15, 18, 63, 91, 101, 142, 150, 251, 276, 280, 290, 300, 301
Pacto, Tobacco 23, 208, 230
Pacto, Cutting Machine for Tailors 331
Pacto, Cutting Curved Surfaces 234
Pacto, Process 198
Pacto, Constructing 338
Pacto, 3, 10, 42, 65, 82, 91, 107, 114, 134, 142 (2), 151, 174, 210, 218 (2), 237, 252, 265, 275, 315, 322
Pacto, Connecting with Steam-Engines 67
Pacto, Tires for Lifeboats 184
Pacto, Propeller and Steering Apparatus 142
Pacto, Propeller, Hand 346
Pacto, projectile for Fire-arms 274
Pacto, projectile for Killing Whales 246
Pacto, Turret 250
Pacto, Friction 323
Pacto, (30), 51, 102 (2), 107, 175, 182, 210, 212 (2), 242, 266 (2), 307, 315, 322
Pacto, Cattle 166, 167, 190
Pacto, Circular 389
Pacto, Gearing and Pistons for 51
Pacto, Operating 67
Pacto, Rotatory 36, 85, 123, 174, 226, 230
Pacto Boxes 290, 296
Pacto and Awl Combined 178
Pacto and Cutting Iron 150
Pacto Metal 300
Pacto, Punching Railroad Bars 199
Pacto, Treating 158

R
Rack for Holding Match Cards 51
Radiators, Steam 122
Rail, Life 106
Rails, Railroad 67, 91, 184, 264, 290
Rails, Railroad Connecting and Supporting 290

Railroads, Constructing of 291
Railroads, Street 306
Railing, Iron 50, 142
Rakes, Hay 42, 43, 232
Rakes, Horse 2, 114 (2), 130, 151, 166, 218 (2), 219, 226, 306, 323, 346
Raking Machine 290
Raking Attachment for Harvesters 107, 125, 307
Raking and Binding Attachment for Harvesters 19
Ramrods, Wormer for 234
Ranges, (Design) 123
Rangoon, Cooking 150, 267, 282
Reaping Machines 135
Reaping Machines, Binder for 10, 90
Refrigerators 67, 74, 98, 190, 191, 295, 268, 291, 331
Register, Billiard 190
Register for Sheets of Paper 226, 227
Register and Folder for Sheets of Paper 226
Registers, Umbilicus 339, 346
Registers for Railroad Cars 290
Register, Time 308
Registers, Time, Operating Index of 330
Registers, Ventilating 166
Regulators, Gas 26, 50, 274, 320, 331
Regulators, Steam Boiler 234
Regulators for Time-keepers 291
Regulator, Steam Pressure 346
Resine, of Eggs 153
Retorts, Coal Oil 18, 65, 182, 199, 230, 251, 263, 299, 330 (3)
Retorts, Gas 143, 158, 252, 314
Retorts Gas, Joints for 270
Rice Cleaners 134
Rico Machine 67
Rico, Polishing 266
Riddles, Wire 66
Rocking Horse 199
Rockwood Type Printing 43
Roller for Preparing Water from Cloches 155
Rollers, Electro-plated 275
Rollers, Field 336
Rivet and Bullet Machine 190
Rock, Cementing 311
Rock, Metallic 199
Rocking Machine 35
Roofing, Attaching Iron 275
Roofing Compositions and Cements 26, 67, 134, 158, 218, 234, 299, 315, 325
Roofing Machine 267 (3), 290
Roofing Machine for Opening 338
Rubber Head for Lead Pencils 267
Rudders for Vessels 75
Rudders, Supporting the Backs of 314
Rules, Printing 167
Ruling Machine 10, 226

S
Saccharine Juice, Defecating and Clarifying 199
Saddle Trees, 98, 183
Saddles, Elastic 150, 261
Safes, Ash and Garbage 106
" Burglar-proof 158
" Iron 10
Sails of Vessels 323
Sails Roofing 167, 198, 266, 290, 323 346
Sandals 266
Sash, Attaching Cord to 282
Sash, Attaching Cord to 282
Sash, Cord Fastener 223
Sash, Elevator 198
" Fastener 2, 74, 98, 142
" Hanging Window 134
" Supporter 183, 315
Sausage Machine 74
Sausage Stuffer 165, 218, 251
Saw File 13, 28, 283, 323, 328, 338
Saw Gunner, 43, 74
Saw Guards, Preventing Vibration of 190
Saw-Jointer, 238
Saw-Mills 22
Saw Set 114 (2), 253
Saws, Rocker Boxes for 250
Saw Set 346
Saw Teeth, Cutting and Setting 175, 242
Saws, Attaching the Spreader to 2
Saws, Circular, Defecting Plates for 42
Saws, Cutting Circular 158
Saws, Grit Filling, 298
Saws, Grinding and Polishing, 182, 183, 234, 239
Saws, Hanging 174
Saws, Reciprocating 188, 210, 226
Sawing Machines 18, 58, 159, 190, 218, 250, 290 (2)
Sawing Machine, Feed for 211
Sawing Machine Felly 98
Sawing Machine Stone 3, 155
Sawing Beveled Surfaces, 814, 233
Sawing Winding Forms 174
Scales, Platform 114, 182, 228, 323 (2)
Scales, Weighing, 314, 322
Scissors, 106, 134
Scrapers, Cotton 42, 226, 290
Scrapers, Dirt 275
Scrapers, Foot 251
Screens (Design) 3
Screens, Coal 323
Screw Blanks, Shaving the Heads of 183
Screw Cutters 19, 35, 143, 323
Screw Cutters, Chuck for 323
Screw Dies, 320
Screw Heads, Dressing, 151
Screw Machines 276 (4)
Screw Plate 210
Screws, Burning Threads on 199
Screws, Die for Cutting, 74, 191
Screws, Molding Female, 226
Screws, Nicking Heads of 274
Screws, Tap for Cutting 74
Screws, Threading 274
Screws, Threaded 94, 99, 251, 346
Scrubbing Machine 66
Seethe Blades 10
Seethe Smatha, 242
Seals, Metallic, 314
Sealing Preserve Jars 90, 151
Seaming Machines, Metal 50, 266
Seats, Carriage 122
Seats, Carriage Attaching Ralls to 288
Seats, Folding 288
Seats for Churches, Schools, &c. 222
Seat Heddles 25, 45, 191, 307
Seat Pictures 31, 10, 90, 106, 114, 142, 150, 168, 182 (2), 227, 251, 306, 307, 323, 329 (2)
Seat Planters, Cotton 2, 226, 274
Seat, Saving Hay 99
Seedling Machines 5 (2), 8 (2), 11, 24, 51, 58 (2), 74 (2), 75, 106 (2), 107, 124 (2), 142, 166, 167, 218, 227, 250, 265 (2), 266, 270, 274, 275, 280, 291, 306, 314 (2), 315, 331, 346 (2)
Seeding Machines, Arms of 190
Separators, Flax 51
Separators for Smut Machines 222
Separators, Grain 8, 66, 74, 134, 210, 236, 274, 306, 307, 315 (3)
Separators, Grain Shoe for 222
Sewing Machines, Clamp for 327
Sewing Machines, Closet for 143 (1)
Sewing Machines, Hemming Guided 210
Sewing Machines, Household 190
Sewing Machines, Oiling the Thread of 2
Sewing Machines, Regulating Tension of 8
Sewing Machines, Roving Lamp 123
Shade Supporter for Lamps 123
Shades, Lamp 298
Shafts, Carriage 306
Shafts, Convertible 10
Shafting, Hanger and Boxes for 35
Shears, 2, 26, 10, 143, 291
Shears for Cutting Metal 79
Shearing Machine, Sheep 226
Shears for Holding 106
Shears for Ordinance 150
Shears, Corn 4, 107, 150, 151, 150, 191, 251, 267, 282 (2), 291
Sheilds for Boots and Shoes 323
Sheilds, Photographic 55, 106
Shingle Machines 18, 35, 50, 90, 158, 183, 218, 242, 283, 298
Shingle, Machines, Clamping the Bolt in 322
Shingle, Machines, Operating the Bolt in 261
Shingles 194
Shingles, Jointing 233
Shingles, Manufacturing from the Log 11, 267
Shingles, Sawing from the Bolt 338
Shingles, Sawing 306
Shipbuilding 90
Shirred Goods, Manufacturing 81
Shirt Bosom Folders 82
Shirts, Drafting, 134
Shirt Studs, Fastening for 2, 242, 274, 275
Shoe Horns 174
Shot, Manufacture of 237
Shot and Shell, Rotating 266
Shoulder, Bone (Design), 61
Shoulder, Grip 306
Shoulder, Sifted 150
Shutter Fasteners, 106
Shutter Operators 2, 274
Shuttles for Weaving Cloth 269
Shuttles, Weavers' 107
Sifters, Coal or Ash 10, 226
Signals, Firemen's 299
Signals, Fog 42
Signals, Pyrotechnic 267, 270
Signals, Transmitting Magnetic on Railroads, 43
Skin, Water-tight 339
Skin, Water-tight 339
Simpson's Apparatus, 267
Sims, for Colorless Papers, 183
Skates, 191, 198 (2), 219, 275, 282, 298
Skate Fastening 250 (3), 298 (2), 306
Skate Irons 27
Skirt Hoops 100
Skirts, Hoop 18, 53 (2) 82; 107, 142, 190, 238
Skirts, Hoop Buckles for 135
Skirts, Hoop Clasps for 3
Skirts, Hoop Evert Fastening for 26
Skirts, Hoop Slides for 43, 50, 134
Skirting Material 18
Skinning Apparatus for Water in Steam Boilers 242
Slats, Blind 158
States, Preparing and Mounting 250
States, Preparing and Mounting 250
Sleds, Running Gear of 346
Separator, Ore 346
Sign-Boards, Fastening Letters on 346
Silent Meat 207
Slaughtering Apparatus 219
Smoke-stacks of Locomotives, Removing Sparks from 2
Smoke-stack of Locomotive Engine Houses 298
Smoking Tube 74
Smut Machine 20, 135, 150, 219, 274, 323, 328
Smut Mills 174, 251
Soap, 314
Soap, Manufacture of 123
Soap, Machine for Cutting 123
Soap, Resin 267
Soia Water Apparatus 153, 174
Soia Frame 166
Soles of Boots and Shoes, Cutting out 190, 267, 306, 323 (2)
Soles of Boots and Shoes, Chamfering 275
Soles of Boots and Shoes, Channeling and Edging 323
Soles of Boots and Shoes, India-rubber 265
Soles of Boots and Shoes, India-rubber 265
Soles of Boots and Shoes, Molding 90
Soles of Boots and Shoes, Smoothing 282
Soles of Boots and Shoes, Water-proof 323
Sorting Machine 74
Sorting Machine for Silk, &c. 26
Sounds, Ascertaining the direction of in Fog 283
Sounding Apparatus, Deep Sea 190, 283
Spadine Machine 51, 150, 190, 290
Span Arrester 42, 190, 275
Spark Extinguisher 234
Spectacles 151
Spectacle Frames 152
Spectre Register for Railroad Trains 90
Speed, Mechanism for Varying 223
Speed, for Throwing 223
Spermatic Rings, 182
Spindles for Throatic Spinning 114
Spinning Flyers 299
Spinning Frames, Ring Traveler, 323
Spinning Machines, Drawing Heads for 314
Spinning Machines, Top Rollers for 9
Spinning Mule Carrage Tops, Cleaning 328
Spinning Flyers 246
Splints, Extension 66
Splints, Surgical 314
Splitter, Wood 175, 283
Spoon Machine 60, 150, 166
Spoon Shave 191, 306
Spoons, Tenoning 191, 219
Spoon Machine 90
Spoon Machine 99
Springs, Air 198
Taffeta, Dining 68
Tables, Extension 114, 237, 266
Tables, Folding 122
Tables, Invisible 218
Tablets, Cast-Metal (Design) 67
Tackles 27
Tank, Steam Water 45
Tanning 266
Tanning Apparatus 45, 230
Tanning Composition 123
Tanning Process 50, 174, 250, 328
Tapering Machine 274
Tarnier, Rope Yarns 98
Tape 200 (2)
Tape Sets (Design) 261
Teeth, Artificial Pins for Securing 330
Telegraph, Magnetic 55, 151, 175
Telegraph Instruments 90
Telegraph Insulators 18
Telegraph, Railway 159
Telegraph Messages, Sending and Receiving at Once 2
Tempering and Molding Mastic Material 282
Tentering Machine 18
Tentering Material for Steam Boilers 283
Thills, Attaching to Vehicles 166
Thread, Gaging 274
Threshing Machines 74, 98, 174, 276, 323
Threshing Machines, Riddle for 85
Threshing Machines, Straw-carriers of 2
Ticket Holders 43
Tickets, Printing Railroad 246
Tide Machine 228
Tiers, Attaching to Vehicles 166
Tiller, Rope Fr-tector 67
Timkeen's Regulating 99
Tin Foil, Manufacture of 218
Spinning Frames, Ring Traveler, 323
Spinning Machines, Drawing Heads for 314
Spinning Machines, Top Rollers for 9
Spinning Mule Carrage Tops, Cleaning 328
Spinning Flyers 246
Splints, Extension 66
Splints, Surgical 314
Splitter, Wood 175, 283
Spoon Machine 60, 150, 166
Spoon Shave 191, 306
Spoon Machine 90
Spoon Machine 99
Springs, Air 198
Taffeta, Dining 68
Tables, Extension 114, 210, 298
Tables, Invisible 218
Tape, Dining 68
Tape, Extension 66
Tape, India 199
Tape, Pipe 106
Tools, for Manufacturing Rubber Goods 43
Tools for Chamfering Leather Straps 74
Tools for Cutting Key Seats in Wheels and Pulleys 106
Tools, Edge 145
Tools for Manufacturing 199
Tools for Cutting Metal 250
Tools for Forming Lugs in the Mouths of Bottles 275
Tools, Spinning 346
Toys, Elastic 199
Toys, Rocking 314
Trace Fastening 3, 143, 267
Trade Marks (Design) 43
Trade Marks, Stamping on Cloth 48
Trap, Animal 11, 42, (2), 74, 90, 290
Trap, Fish 166, 228
Trap, Fly II, 14, 183, 198, 319, 351
Trap, Horn 43
Trap, Fly 346
Transit Instrument 66
Treadie Stand 311
Treeing Sticks 275
Troughs, Wooden 182
Trucks, for Locomotives 74
Trucks, Raising Railroad 323
Trunks, Life-Preserving 143
Trunks for Roofs, Bridges, &c. 339
Trunks Pad 26, 50
Trusses, Bell 175
Trusses, Hernial 274, 306
Truss, for the Ship 234
Trussing in Wood 135
Twister, Blacksmith's 82, 98, 314
Twist Regulator in Throatic Frame 191
Twisting Fibrous Substances 175
Type Case 267
Typographer 142
Type Script (Design) 91

Q
Quarrying Machine 222

U
Umbrellas 2, 58, 98, 267
Umbrella, Bim 150
Umbrella, Frame 88, 166, 167
Umbrella Fastening 198

V
Voke Ring Attachments for O-Carts 282
Yokes, for Ship's Rudder 226
Yokes, Ox, 3, 166, 322

V
Valves, Butterfly 306
Valves, Combination 19
Valves, Cut-Off 42, 58, 106, 134, (2), 198
Valve 346
Valve Gear 219, 268
Valve Gear for Oscillating Engine 174, 267
Valve, Governor 10, 123, 226
Valve and Governor Combined 18
Valve for Gas Meters 114, 315
Valves, Operating 10
Valves, Pressure and Vacuum 19
Valves of Pumping Engines 150
Valves, Rotary 26
Valves, Slide 183
Valves, Steam-Engine 42, 106, (2), 107, 150, 128 (2), 166, 174, 191, 266
Valves, Steam Trap 11, 106
Valves, Tubular Elastic 270
Vapor Apparatus, Hydro Carbon 390
Vane Light, Glass 98, 193
Vault Light, Frame for 94
Vegetable Cutter and Coffee Mill 90
Vehicles, Attaching Holes to 266
Vehicles, Attaching Thills to 274
Vehicles, Guide Attachment for 274
Veneer Cutter 26
Ventilator, Car 198, 207
Ventilator Pump 57
Ventilators 21
Ventilating Corn Houses 346
Ventilating Houses 167
Ventilating Window for Cars 167
Vessels, for Holding Liquids 91
Vessels, Construction of 218, 275
Vessels, Hulls of 175
Vessel, Center Board for 90, 218
Vessel, Launching 19
Vessel, Jib-boom for 306
Vessel, Rig of 34, 322
Vests, Life-Preserving 89
Violina, Tail Pieces for 339
Vise, Gas-fitting 71
Vise, Photographic Plate 175, 182
Vulcanized Gum, Detaching Paper from 152

W
Wadding, Filling and Cutting 291
Wagon, Ambulance 34
Wagon, Dumping 236
Wagon, Sail 285
Walls, Building under Water 18
Walking on the Water, Apparatus for 143
Wardresser Guides 18
Wardresser Guides, Molds for Making 18
Waris, Dressing and Sizing 135
Waris, Cooling 67
Washboards 90 (2), 166
Washer, Coal 126
Washing Machines 3, 18 (2), 26, 42 (2), 66 (3), 67, 114, 122 (2), 143, 150, 158 (2), 174, 175 (4), 182 (2), 190, 199, 218, 219, 234, 235, 267, 282, 283, 284, 290, 299, 315, 322, 330, 339, 353
Washing Machine 346
Watches, Launching 19
Watches, Jib-boom for 306
Watches, Rig of 34, 322
Vests, Life-Preserving 89
Vessels, Construction of 218
Vessels, Hulls of 175
Vessel, Center Board for 90, 218
Vessel, Rig of 34, 322
Vessel, Tail Pieces for 339
Vessel, Water, Sliding for 191
Vessels, Shopping 191
Watches, Securing Springs of 153
Watches Cases 99, 114, 210, 298
Watch Chains 224
Watch Faces 135
Watch Guards (Design) 307
Watch Springs, Equalizing the Tension of 242
Water, Distilling Salt 43
Water, Drawing from Floating Dry Docks 182
Water, Drawing 191
Water, Device for Raising 225, 327, 338, 339
Water, Elevating by Combustion 67
Water Conductor for Cisterns 306
Webbing, Manufacture 121
Well, Apparatus for Boring 93
Wharves, Constructing 218
Wheels, Cars 24, 32, 198
Wheels, Carriage 228
Wheels, Paddle 66, 66, 167, 190, 242, 315, 338
Wheels, Pr. 114, Arranging Buckets on 291
Wheels, Locomotive, Chilling Rims of 290
Wheels for Tractor Engines 242
Wheel, Water, 26 (5), 51, 122, 182, 191, 210, 219, 236, 262, 274, 284, 286, 295 (2), 299, 308, 314, 315 (3)
Wheel, Water, Slides for 191
Wheelchair, Water 241
Whistle, Twirling's Machine 298
Whistlestrees 297
Whistlestrees Hook 346
Whistles, Automatic Steam 92
Whistles, Operating Steam or Air 299
Whitie Lead, Manufacture of 82, 167, 298
Wicks, Lamp 66, 291
Willows, Peeling 50
Windlasses 192, 282, 298
Windlasses for Moving Cars, &c. 43
Windlasses for Ships 21, 209
Windmill, 128 (2) 306
Windmills, 128 (2) 306
Wind Wheel 166, 174, 238
Wood, Variegating 182
Wood, Drawing and Twisting 19
Wood, Packing 291
Wood, Preparing for Spinning 75
Wool, Rolling 236
Wool, Rolling and Pressing 187
Wrench 193, 233, 290, 291, 323, 330, 331
Wrench for Gas Pipe 298
Wristband Fastening 1

